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IMPACT OF CUSTOMER DEMOGRAPHICS ON THE CRM AWARENESS AND EFFICIENCY: AN EXPLORATORY STUDY OF THE FIVE SELECT PUBLIC SECTOR BANKS IN INDIA

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ABSTRACT

The major objective of this research study is to analyze the nature and impact of customer demographics (gender, occupation and tenure of banking) on the CRM awareness and efficiency from five select public sector commercial banks that are located in Hyderabad and Secunderabad cities of Andhra Pradesh state. A sample size of 2502 respondents was chosen and a survey instrument was designed to measure the relationship between the demographics and CRM awareness and efficiency. CRM efficiency was measured on a Likert scale of 1 to 5, where 1=Very Low, 2=Low, 3=Moderate, 4= High and 5= Very High. Chi-Square test was performed to asses the relationship between the respondents' occupation and their perception of CRM awareness. This test was also used for testing the association between the tenure of banking and CRM effectiveness. The relationship between the gender type and customers' bank preference was also tested by using Chi-Square test. In line with the research findings suggestions were offered to strengthen the service delivery in the Indian banks.

KEYWORDS

Customer Relationship Management (CRM), Principal Components Analysis (PCA and, Automated Teller Machine (ATM).

INTRODUCTION

The phenomenon of globalization has paved the way for the entry of new generation multinational (foreign) banks in general and private sector banks in particular into the Indian banking market. Several banking experts argue that the world class services that are offered by these new generation banks have a tremendous bearing on the mindset and expectations of Indian banking customers. The services that are offered by these banks are characterized on a 24 hour X 7 day a week basis with a focus on delivering higher quality of service across the multiple channels. In this context, phone banking and internet technologies have emerged as a major option before the Indian banks. In addition to these modern services such as Tele-banking, Internet banking, Mobile banking, and Automated Teller Machine (ATM) banking are also offered by Indian banks to serve customers better. It is against this backdrop, the studies on understanding the demographics of customers' and their attitudes towards customer relationship management (CRM) practices are gaining importance.

Several researches studies that were conducted on the customer service aspects of Indian banking scenario, highlighted the need for designing effective customer relationship management (CRM) systems for enhancing the customer satisfaction and loyalty. It is against this background, Reserve Bank of India (RBI) instructed all public sector banks to focus on implementing innovative customer relationship management (CRM) systems through multiple touch points of CRM systems such as call centers (to disseminate information to customers), websites (to enable flow of information from anywhere in the world), email systems and interactive kiosks (to cater to the ever changing customer needs) across various service units and support processes. Research studies further revealed that customer relationship management (CRM) is emerging as an offshoot of the modern technological landscape by incorporating customer demographics, business intelligence, and Internet proximity and therefore takes its place at the heart of the modern banks. These technological advancements and global competitive pressures have reoriented the public sector commercial banks in India to pay more attention to the changing customer needs and effective CRM interventions in the light of the changes in the consumer demographics.

LITERATURE REVIEW

There is an increasing body of research evidence which highlighted the importance of understanding the nature of customer demographics and its impact on the service delivery in Indian banks (Sureshchander et al,(2003); Gudep& Elango,(2006); Rajanish& Snageetha,(2005); Navdeep& Mohit,(2005)). Research studies also revealed that retaining current customers is a major challenge before the Indian banks. It was also observed that this is a far more difficult task than attracting new customers. In this context, several research studies that were conducted on the Indian banking scenario have revealed that customer satisfaction may in turn result in loyalty towards the brand, continuous sales and repeat purchase intentions (Pratibha et al, 2000). In this context, Niraj et al (2001) made an effort to explain why customer relationship management (CRM) philosophy fails in the Indian banking context by addressing the issue of organizational culture of the bank and its impact on the spirit of CRM implementation programs. Rajnish et al (2007) also conducted a research on CRM implementation in the Indian Public Sector Banks, with a focus on profit generation, increase of market share, cost of baking transactions and expected profit margins under the risk conditions. Several global research studies also revealed that understanding the customer demographics is critically important for the success of the banking organizations (Huber & Morgan,(2001); Caruana, (2002); .Research studies that were conducted in the Indian context also revealed that analysis of consumer demographics played a vital role in supporting innovative service concepts and providing novel ways of service delivery. It is against this background that research studies on the nature of consumer demographics and its impact on service delivery mechanisms are gaining validity.

NEED OF THE STUDY

The present research study is valid against the backdrop of the competitive challenges that are posed by multinational banks and private banks on account of the globalization. The invasion of banking industry by technology has created an information age and it prompted Indian public sector commercial banks to design world-class customer service systems and practices to meet the growing customer needs. It is against this background, research studies on understanding the attitudes of the customers by linking them to their demographics and the need for designing effective customer service delivery interventions are gaining importance.

OBJECTIVES OF THE STUDY

The major objectives of this research study are as following.

1. To understand the customers' awareness of the CRM practices in the select public sector commercial banks in India.
2. To assess the influence of occupation of the respondents on the awareness of CRM.
3. To focus on the relationship between the tenure of banking of the customers' and CRM efficiency.
4. To find the association between the gender and the customers' preference of the bank.
5. To offer suggestions to improve the quality of service delivery in the Indian public sector banks.

SCOPE OF THE STUDY

The scope of the study is limited to the survey of customers of five select public sector commercial banks namely State Bank of India (SBI),State Bank of Hyderabad (SBH), Andhra Bank, Punjab National Bank and Indian Overseas Bank in Hyderabad and Secunderabad cities of Andhra Pradesh state.

RESEARCH HYPOTHESES

Three research hypotheses were formulated for this research study. They are as following.
Hypothesis 1: There is an association between the occupations of the respondents and their awareness of CRM.
Hypothesis 2: There is a relationship between the tenure of banking and CRM efficiency.
Hypothesis 3: Gender has an influence on the bank chosen by respondents.

SAMPLE SIZE AND NATURE OF RESPONDENTS

For this research study, five select public sector commercial banks were chosen which include State Bank of India (SBI), State Bank of Hyderabad (SBH), Andhra Bank, Punjab National Bank (PNB) and Indian Overseas Bank (IOB). Cluster sampling method was used for this research study.
The sample size is 2502. The respondents are drawn from five select banks, who were holding a banking account in Hyderabad and Secunderabad cities of Andhra Pradesh state in India.
The respondents were drawn from the five select banks located in two select cities. Three demographic profiles were considered for further analysis and they include occupation, gender and tenure of banking. Respondents differed in terms of four types of occupations (Government service, Private sector, retired employees who are living on pension and small scale entrepreneurs). Both male and females were considered for this research study. Respondents also differed by the number of years of the bank account (tenure). They varied in terms of 1 year account holding, 2 years account holding, 3-5 years account holding and above 6 years.

SOURCES OF DATA COLLECTION

Research data was collected from both primary and secondary sources. The primary data was collected by administering questionnaire to the respondents. Questionnaires were administered to them by meeting them in their respective offices with prior appointment. In addition to this, personal interviews were also conducted to understand the respondents' attitudes towards CRM aspects in the five select banks. Secondary data sources were also used to collect the data for this research study. Bulletins from banking staff colleges which include RBI publications and manuals were major sources of secondary data. Various other sources like journals and magazines, which focus on the contemporary issues in the banking areas, were also referred.

METHOD OF RESEARCH

A Questionnaire with 49 statements (variables) was developed to measure the attitudes of the respondents' from five select banks towards CRM practices by using Principal Components Analysis (PCA) method. Customers' awareness of CRM was tested in terms of Yes or No. CRM efficiency was measured on a Likert scale of 1 to 5, where 1=Very Low, 2=Low, 3=Moderate, 4= High and 5= Very High. Frequency distributions of the consumer demographics in terms of gender, type of occupation and tenure of banking were designed. Chi-Square test was performed to asses the association between the respondents' occupation and their awareness of CRM. The same test was used to check whether the nature of gender (male and female) has any impact on the consumers' preference for a bank. The five banks that were considered for this research study are State Bank of India (SBI), State Bank of Hyderabad (SBH), Andhra Bank, Punjab National Bank (PNB) and Indian Overseas Bank (IOB). Suggestions were offered to improve the quality of service delivery in the five select Indian banks.

FREQUENCY DISTRIBUTIONS

The frequency distributions of the respondents' awareness towards five select banks are displayed below. The frequency distributions are related to four types of tenure of banking, occupation, gender basis and awareness of CRM are displayed. The frequency distribution of response rate of respondents among the five select public sector commercial banks is also displayed below.
The frequency distribution of the response rate among the respondents of four types of tenure of banking considered for this study is displayed in Table.

TABLE 1 - DISTRIBUTION OF FREQUENCIES OF RESPONSE RATE AMONG THE FOUR TYPES OF TENURE OF BANK ACCOUNT OF THE RESPONDENTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Year	672	26.9	26.9	26.9
	2Years	694	27.7	27.7	54.6
	3-5 Years	627	25.1	25.1	79.7
	Above6 Years	509	20.3	20.3	100.0
	Total	2502	100.0	100.0	

TABLE 2 - DISTRIBUTION OF FREQUENCIES OF RESPONSE RATE AMONG THE 4 TYPES OF RESPONDENTS

		Frequency	Percent	Valid percent	Cumulative Percent
Valid	Government Service	670	26.8	26.8	26.8
	Private Sector	672	26.9	26.9	53.6
	Savings Oriented	633	25.3	25.3	78.9
	Small Scale and Self Employed	527	21.1	21.1	100.0
	Total	2502	100.0	100.0	

TABLE 3 - DISTRIBUTION OF FREQUENCIES OF MALE AND FEMALE RESPONDENTS AMONG THE FIVE TYPES OF BANKS

		Frequency	Percent	Valid percent	Cumulative Percent
Valid	Male	1267	50.6	50.6	50.6
	Female	1235	49.4	49.4	100.0
	Total	2502			

TABLE 4 - DISTRIBUTION OF FREQUENCIES OF AWARENESS OF CRM

		Frequency	Percent	Valid percent	Cumulative Percent
Valid	Yes	1833	73.3	73.3	73.3
	No	669	26.7	26.7	100.0
	Total	2502	100.0	100.0	

TABLE 5 - DISTRIBUTION OF FREQUENCIES OF RESPONSE RATE AMONG THE FIVE SELECT BANKS

		Frequency	Percent	Valid percent	Cumulative Percent
Valid	Andhra Bank	446	17.8	17.8	17.8
	State Bank of India	533	21.3	21.3	39.1
	State Bank of Hyderabad	781	31.2	31.2	70.3
	Punjab National Bank	379	15.1	15.1	85.5
	Indian Overseas Bank	363	14.5	14.5	100.0
	Total	2502	100.0	100.0	

CHI-SQUARE TESTS

Three Chi-Square tests were conducted separately to assess the influence of customer demographics (tenure of banking, occupation and gender) on the CRM awareness and efficiency.

Initially a Chi-Square test was performed to test the association between the types of respondents based on occupation and their awareness of CRM. Both Null hypothesis (H_O) and Alternate hypothesis (H_1) are formulated and they are as following.

H_O: Types of respondents based on occupation has an influence on their awareness of CRM.

H_1: Types of respondents based on occupation has no influence on their awareness of CRM.

TABLE 6 - CHI SQUARE TABLE OF TYPE OF RESPONDENTS BASED ON OCCUPATION AND CRM AWARENESS

			CRM Awareness		
			Yes	*No*	*Total*
Respondents Type Based on Occupation	*Government Service*	Count	445	225	670
		Expected Count	490.9	179.1	670
	Private Sector	Count	505	167	672
		Expected Count	492.3	179.7	672
	Savings Oriented	Count	502	131	633
		Expected Count	463.7	169.3	633
	Small Scale and Self Employed	Count	381	146	527
		Expected Count	386.1	140.9	527
	Total	Count	1833	669	2502
		Expected Count	1833	669	2502
Pearson's Chi-Square Value			***0.000 at Degree Of Freedom = 3 (α = 0.05)***		

INTERPRETATION

A lower value of Pearson's Chi Square Test (0.000) demonstrates that there is a significant interrelationship between the type of respondents based on occupation and their awareness of CRM. Since this value 0.000 is less than 0.05 it can be concluded that the test is significant at α= 5%. It can also be inferred that the type of respondents based on occupation has an influence on the consumers' awareness of CRM. Therefore, the Null Hypothesis (H_O) is accepted.

Again, Chi-Square test was performed to test the association between the tenure of banking and CRM efficiency. Both Null hypothesis (H_O) and Alternate hypothesis (H_1) are formulated and they are as following.

H_O: There is an association between the tenure of banking and CRM efficiency.

H_1: There is no association between the tenure of banking and CRM efficiency

TABLE 7 - CHI SQUARE TABLE OF TENURE OF BANKING AND CRM EFFICIENCY

			CRM Efficiency					
			Very Low	*Low*	*Moderate*	*High*	*Very High*	*Total*
Banking Tenure	*1 Year*	Count	84	84	179	164	161	672
		Expected Count	98.3	131.1	147.5	147.5	147.7	672
	2 Years	Count	125	161	191	146	71	694
		Expected Count	101.5	135.4	152.3	152.3	152.6	694
	3-5 Years	Count	80	124	80	199	144	627
		Expected Count	91.7	122.3	137.6	137.6	137.8	627
	Above 6 Years	Count	77	119	99	40	174	509
		Expected Count	74.5	99.3	111.7	111.7	111.9	509
	Total	Count	366	488	549	549	550	2502
		Expected Count	366	488	549	549	550	2502
Pearson's Chi-Square Value			***0.000 at Degree Of Freedom = 12 (α = 0.05)***					

INTERPRETATION

A lower value of Pearson's Chi Square Test (0.000) demonstrates that there is a significant interrelationship between the banking tenure of the respondents and CRM efficiency. Since this value 0.000 is less than 0.05 it can be concluded that the test is significant at α= 5%. It can also be inferred that the banking tenure of the respondents has an influence on the CRM efficiency. Therefore, the Null Hypothesis (H_O) is accepted.

Further, Chi-Square test was used test the association between the nature of the gender and customers' bank preference. Both Null hypothesis (H_O) and Alternate hypothesis (H_1) are formulated and they are as following.

H_O: There is an association between the gender (male and female) and the bank chosen by the respondents.

H_1: There is no association between the gender (male and female) and the bank chosen by the respondents.

TABLE 8 - CHI SQUARE TABLE OF GENDER AND PREFERENCE FOR A BANK

			Preference for a Bank					
			Andhra Bank	*State Bank of India*	*State Bank Of Hyderabad*	*Punjab National Bank*	*Indian Overseas Bank*	*Total*
Gender	*Male*	Count	229	268	396	195	179	1267
		Expected Count	225.9	269.9	395.5	191.9	183.8	1267
	Female	Count	217	265	385	184	184	1235
		Expected Count	220.1	263.1	385.5	187.1	179.2	1235
	Total	Count	446	533	781	379	363	2502
		Expected Count	446	533	781	379	363	2502
Pearson's Chi-Square Value			***0.976 at Degree Of Freedom = 4(α = 0.05)***					

INTERPRETATION

A higher value of Pearson's Chi Square Test (0.976) demonstrates that there is no significant interrelationship between the gender of the respondents and preference for the bank. Since this value 0.976 is greater than 0.05 it can be concluded that the test is not significant at α= 5%. It can also be inferred that the gender of the respondents has no influence on the CRM efficiency. Therefore, the Null Hypothesis (H_O) is rejected.

SUMMARY OF THE RESEARCH FINDINGS

A summary of the research findings is presented below.

1. The respondents' awareness of the CRM revealed that a large proportion of respondents (73.3%) are aware of CRM aspects of the five select public sector commercial banks that are chosen for this research study.
2. Analysis of the Chi-Square test results on the association between the respondents' occupation and their awareness of CRM revealed that occupation has an influence on the CRM awareness across the five select banks.
3. Chi-Square test results on the association between the tenure of banking and CRM efficiency revealed that tenure of banking has an influence on the CRM efficiency.
4. Chi-Square test results further revealed that there is no association between the nature of the gender and customers' bank preference.

SUGGESTIONS FOR IMPROVING SERVICE DELIVERY

The following suggestions are offered to improve the service delivery in the Indian public sector commercial banks.

1. Indian public sector banks may focus on understanding the demographics of the customers in order to serve better.
2. Public sector banks may pay attention to design interactive and user-friendly web sites for accessing 24X7 basis online banking transactions.
3. In view of the dynamic nature of the consumer demographics, Indian public sector banks may consider using biometrics by replacing the traditional methods of Personal Index Number (PIN) while using ATM transactions. The biometrics may include modern finger print identifications details through retina or face.
4. Indian public sector banks may consider using the technology to increase the speed of the service delivery. Emphasis may be laid on phone banking, e-banking and mobile banking.
5. Indian banks may consider designing E-customer service interventions on par with foreign and private banks by using the auto responder feature.

CONCLUSION

This research study made an attempt to analyze the nature of the demographics of the customers' and their impact on the CRM awareness and efficiency. The findings of this research study revealed that the tenure of banking of the respondents has an influence on the CRM efficiency. It was also observed that the occupation of the respondents has an influence on the consumers' awareness of CRM. Further analysis of the data revealed that the gender of the respondents has no influence on the CRM efficiency. In line with the research findings, an effort was made to offer suggestions to strengthen the service delivery in the five select public sector commercial banks in the two select cities. These suggestions are based on the findings of the current research study and the suggestions that are offered by the respondents. The suggestions mainly focused on the issues like understanding demographics, usage of technology and E-customer service. Focusing on these suggestions may help the Indian banks in improving the quality of service delivery.

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A FRAMEWORK FOR LEADERSHIP DEVELOPMENT IN PUBLIC SECTOR BANKS

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ABSTRACT

This paper provides an overview of the leadership development frameworks. It refers to leadership development as an organizational process for developing leaders based on the strategic needs and presents a synthesized framework/approach for leadership development in public sector banks.. Leadership development is a two way collective process of teaching and learning in meeting the challenges of change on a continuous basis and prepares the organization for future. A framework is a model representing the elements of the leadership development program. This paper presents a flexible framework to Leadership Development considering the changing needs of public sector banks and needs assessment at various levels of the banks.

KEYWORDS

Leadership; Leadership development; Leadership Development Framework.

INTRODUCTION

Leadership and its study have roots in the very beginnings of human civilization. Egyptian rulers, Greek heroes and biblical patriarchs all have one thing in common –LEADERSHIP. (School of leadership, Regent University, 2005)

Nature of work, work environment, worker motivation, leaders, managers, leadership styles and other related variables have been studied at length for almost two centuries. But leadership focus has undergone radical changes over the years. In this connection, the moot question seems to be: What is leadership?

Leadership seems to be one of the most observed but least understood phenomenon in human relations. (Burns, 1978) Problems arise not only in understanding the operation of the theory but also in definition of leadership. There are almost as many definitions of leadership as those who have attempted to define the concept. It is a complex construct and open to subjective interpretation. (Northouse, 2004)

Leadership can be best understood as the ability to influence a group of people towards achievement of common goals.

Leadership is the process of influencing people by providing a purpose, a direction, and motivation while operating to accomplish the mission and improve the organization. (Stogdill, 1974)

"Most definitions of leadership reflect the assumption that it involves a social influence process whereby intentional influence is exerted by one person [or group] over other people [or groups] to structure the activities and relationships in a group or organization" (Yukl, 2002).

After an overview of various definitions of leadership, for the sake of simplicity we can understand that

Leadership is a process

Leadership involves influence

Leadership occurs in groups

Leadership includes attention to goals (Northouse, 2004)

WHY IS LEADERSHIP DEVELOPMENT IMPORTANT?

In a fast changing global environment leadership holds the answer not only to the success of individuals and banks but also to various sectors, regions and nations. The need for effective leadership is voiced more strongly now than ever before.

A Google search on leadership results in 1290 million options in 0.17 seconds but currently the number of articles published on leadership every month is about 745. (google, 2011)Also there is an increasing investment in leadership and management development, globally. These facts highlight the importance of leadership in both business and non-business organizations (Borins, 2002).

Businesses accept the role of effective leadership in organizational success, so now greater attention has been focused on the roles of Leader and Leadership development. (Leadership south-west, 2004)

Let us turn our attention to the question: What is Leadership Development?

There is a growing amount of research devoted to the complex concept of Leadership development. (Cohen, 1999)

Early writings on Leadership Development refer to activities that enhance an individual's ability to lead and search for effective leaders with leadership traits. (Institute for educational leadership, 2008)

LEADER DEVELOPMENT VS. LEADERSHIP DEVELOPMENT?

Leader development involves development of an individual's capacity to lead whereas Leadership development is development of a group's shared capacity to lead. It is the expansion of organization's capacity to enact the basic leadership tasks needed for collective work. (Day.David, 2001)

Leader development is an activity or event whereas Leadership development is a process.

In leader development the focus is on developing an individual's tasks and competencies whereas in leadership development the focus is on leadership as a social system.
The earlier approach to leadership development was oriented towards building capabilities in anticipation of unforeseen challenges. 20th century institutions used leadership theories to identify and inculcate skills necessary to lead. The emphasis was on individual's knowledge, skill, and ability associated with formal roles.
There is a shift in emphasis in designing developmental activities to enhance collective capacity of groups to carry out leadership tasks. Currently leadership development is moving towards shared capacity of the group or organization by involving followers and enhancing the quality of working relationships among employees at and of all levels.
Leadership development is the deliberate, continuous, sequential and progressive process, grounded in organization's values that grow people into competent and confident leaders capable of decisive actions.
Modern view is that Leadership Development is a responsibility to be discharged effectively by the organization that determines the efficiency of an organization so that there is no dearth of leadership for the future needs of the organization.

CAN LEADERSHIP BE LEARNED? OR CAN LEADERSHIP BE TAUGHT?

Illustrious leaders, researchers, business schools, Consultants and sponsors of leadership development are unanimous that by carrying out efforts to develop leaders and by continuously improving the various Leadership development practices we can teach leadership, the only difference being the content and context of practices
They also agree that there is a positive impact of leadership or leadership development on the performance and productivity of an organization.
The trait approach was one of the earliest approaches for studying leadership. This approach emphasizes leaders' attributes such as personality, motives, and skills.
Underlying this approach was the assumption that some people are natural leaders, endowed with certain traits not possessed by other people (Yukl, 2006). Others viewed leadership as linked naturally and necessarily to cognitive ability or general educational accomplishment (Connaughton, Lawrence & Ruben 2003). Thus leaders were born and as such, leadership could not be developed.
However there is an immense body of scholars who believe that leadership can be taught and developed. According to Brown (2003), research suggests that leadership is a skill that can be developed. This is done by participating in educational opportunities and develops through small and steady changes in behavior. Nau (2003) states that there is consistent evidence that leadership can be taught. He believes that developing as a leader is a constant learning process. This is done through training and counseling by developing specific action plans based on the theory.
Allio (2005) adds that leadership consists of behaviors, which are tangible, observable, and to some extent measurable things, which one does and/or which one can learn to do, given reasonable motivation and average intelligence. He believes that leadership is not genetically endowed, because if it was would imply that it would not be learnable. He also asserts that most leadership training initiatives promote leadership literacy but not leadership competence. Paradoxically, however, while leadership cannot be taught, leadership can be learned. Men and women become leaders by practice, by performing deliberate acts of leadership. (Allio, 2005)
Boaden (2006) observes that training efforts in many organizations appears based on the belief that there are appropriate ways to lead others, and that these ways can be taught to managers. There are concepts and practices that can be learned and taught that will enhance the leadership effectiveness of people. Work experiences, bosses, special projects, role models, education all play a role in leadership development. But the methods of teaching need to focus on creating meaningful experiences from which the student can learn.
Allio (2005) believes that believes that leadership is simply not a craft that schools can teach; men and women become leaders only after tempering in the harsh crucible of organizational experience.
Connaughton, Lawrence and Ruben (2003) state further that leadership competencies do not develop automatically as a consequence of having particular cognitive abilities or discipline expertise. As with musical, athletic, and other performance competencies, the requisite knowledge and skills for leadership can be taught and learned.
This paper takes the stance that leaders are a combination of both natural born abilities and development activities, that people can learn and grow, and that organizations can facilitate leadership effectiveness.
Also as the current leadership needs of business are more than those available with a natural in born qualities; the only alternative being to grow our own leaders according to our needs.

NEED FOR LEADERSHIP DEVELOPMENT IN PUBLIC SECTOR BANKS

The key to the success of any organization lies in efficiently managing its human resources. The principle applies more aptly to service institutions like banks. The issue is all the more relevant to the public sector banks who are striving hard to keep pace with the technological changes and meet the challenges of globalization.
In order to meet the global standards and to remain competitive, banks will have to recruit specialists in various fields such as Treasury Management, Credit, Risk Management, IT related services, HRM, etc. or develop these competencies in their people and institutionalize a mechanism for this activity (Indian Banks Association, 2003)
To institutionalize talent management, the first priority for the banking industry would be to spot, recognize and nurture the talent from within. Secondly, the industry has to attract the best talent from the market to maintain the required competitive edge vis-a-vis global players. However, the issue of critical importance is how talent is integrated and sustained in the banks. Therefore, a proper system of talent management has to be put in place by all the banks.
As the entire Indian banking industry is witnessing a paradigm shift in systems, processes, strategies, it would warrant creation of new competencies and capabilities on an on-going basis for which an environment of continuous learning would have to be created so as to enhance knowledge and skills. (Indian banks association, 2010 July-September)

WHAT IS THE URGENCY?

With nearly a quarter of the workforce in public sector banks set to retire in the next two-three years, the government has asked these institutions to come up with a strategy to leverage technology and business process reengineering to make up for bridging the gap created by shortage of staff.
Recently government sought a detailed assessment of manpower planning to fill up shortfalls. Also banks have been asked to build a pool of talent that can take up leadership positions.
In a communication to PSBs including State Bank of India, Punjab National Bank, Bank of Baroda, Bank of India and Canara bank; finance ministry said that Banks should endeavour to train their officers from the level of AGMs to prepare them for assuming leadership roles. (Business line, 2010)

NEED FOR QUALITY LEADERS

The government as a majority shareholder in PSBs seems to be more concerned about the quality of people who will step in to shoes of the present breed of experienced bankers.
Suggestions were also sought on institutionalizing leadership training in banking system to fill the gaps in the leadership pipeline.
PSBs are expected to come under pressure on the manpower front on two counts.

1. On the one hand experienced employees recruited in the mid-seventies will retire.
2. On the other, many will seek voluntary retirement in the wake of the recent industry-wide wage settlement, whereby provident fund optees have been allowed to plump for pension as a terminal benefit.

DWINDLING MANPOWER

The gravity of manpower situation in the PSBs can be gauged from the fact that the number of employees (including officers, clerks, and award staff who retired in 2008, 2009 was around 21500 and 25000 respectively. In the current year 2010 about 28000 employees have superannuated.

Though the banks have recruited by thousands in the last two years, these new recruits can not be expected to fill the shoes of the experienced bankers from the word go. (Bancon, 2010)

PSBs are facing high attrition as youngsters are hopping from one bank to another for higher pay and position.(All-India bank officers association,2010)

Manpower gap has risen in PSBs as recruitments happened only in dribs and drabs between the mid-1990's and 2005. In this regard banks have been asked to come up with a plan on how the manpower shortfall in the available positions can be filled-up.

To reduce the burden on branches and overcome the shortage of staff, the strategy on technology could encompass efforts to popularize alternative delivery channels such as ATMs, internet and mobile banking while that on Business Process Re-engineering could deal with redesigning processes associated with products and services.

Given the employees' present competence and skill-sets in the face of ever increasing challenges of the banking industry, Banks are required to focus on the training and Leadership Development requirements of their staff.

Banks will be required to prepare an action plan on the number of employees trained in risk, forex and treasury management, branch operations, credit/ project appraisal during the last two years and the number of employees who are further required to be trained. Banks are required to groom the talent, nurture and develop the talent and retain the talent not only to survive in the highly competitive scenario but also grow in view of the emerging opportunities driven by the high growth momentum in various sectors of the Indian economy.

Today's banking has become knowledge-based and technology-driven. If there is one single lesson to be learnt from the entire process of transformation the world over, it is that 'people' are the real strength of the organization and that they manage the transformation. Being a service as well as a financial organization, the success and survival of the bank depends upon its human capital. (Bancon, 2010)

In a fast changing world, the human capital of an organization erodes rapidly due to obsolescence and superannuation, unless it is recapitalized with new skills ie, re-skilling and replenishment. But PSBs in India are now at crossroads; facing serious challenges on the human capital front due to lack of dynamic human resource management. These efforts by PSBs would help them restrict the onslaught of new generation private and foreign banks and to retain their customer base and grow. But, unfortunately, over the years, PSBs had very little vision or long term strategy in the area of HR requirement for tomorrow's banking. (Bancon, 2010)

A RANGE OF GLOBAL LEADERSHIP COMPETENCY FRAMEWORKS ACROSS ORGANIZATIONS

The most popular and best practices in leadership development across various organizations and sectors in companies like General Electric, Motorola, PepsiCo, Federal Express, Johnson & Johnson, Astra Zeneca, General Motors, BAE systems, Philips, Lufthansa, Shell and Vodafone were studied for identifying common competencies. In addition leadership development practices from a cross-section of institutions including public sector and government sector like Senior Civil Service of UK, Department for education and skills (UK), Northern Ireland civil service, Scottish executive framework, Ministry of defense(UK), Employers organization for local government(UK), National Health service leadership qualities framework, National college for school leadership, Senior executive service (US) and Leadership development model of National Aeronautics and space administration(NASA-USA) provides an opportunity to have a comprehensive understanding of various approaches to leadership development. Many other generic frameworks like Council for excellence in management and leadership, Management and training organization, IIP leadership and management model, EFQM business excellence model, Institute of chartered management Skills, IMF management competencies, Hamlin's generic model, Zenger Miller grass-roots leadership model were also reviewed for identifying what is desired of leaders and the manner in which the required competencies are developed and to know how these are integrated in to leadership development practices. (Centre for leadership studies, 2003)

Many of the frameworks suffer from an overemphasis on the role of individual leader and suffer from lack of research. No information was available on how the frameworks were developed. Many of the frameworks are loosely based on notions of the company culture, guidance of the CEO and what seems to be acceptable. (Bolden, 2003)

WHAT COMPETENCIES DO PUBLIC SECTOR BANKS FOCUS ON?

The purpose of this pioneering study was to examine the leadership development frameworks available in public sector banks, if any, what competencies they need to focus and suggest a generic framework for banks in general and public sector banks in particular in India.

A comprehensive structured interview was conducted on a random sample of managers including HR managers and Training managers of public sector banks. The size of the sample was 60.The overall response rate was 57% after a series of visits and a follow-up. On the basis of information obtained through interviews a set of generic competencies were identified and a framework has been developed. However actual selection of competencies needs to be customized by individual banks to suit their contextual leadership development needs.

TABLE-1: CADRE-WISE DESIGNATIONS OF OFFICERS OF PUBLIC SECTOR BANKS IN INDIA

DESIGNATION OF OFFICERS IN BANKS IN INDIA	GRADE	SCALE	FUNCTIONAL LEVEL
Officer	Junior Management Grade I	**1**	Branch/Department level
Manager	Middle Management Grade II	**2**	Branch/Department level
Senior Manager	Senior Management Grade III	**3**	Branch/Department level
Chief Manager	Senior Management Grade IV	**4**	Branch/Department level
Assistant General Manager	Senior Management Grade V	**5**	Large Branch /Regional office level
Deputy General Manager	Senior Management Grade VI	**6**	Regional/Zonal/ Head office / Corporate level
General Manager	Senior Management Grade VII	**7**	Zonal office /Head office/ Corporate level
Executive Director	Senior Management Grade VIII	**8**	Corporate level
Chairman and Managing Director	Senior Management Grade VIII	**8**	Corporate level

TABLE-2: PROPOSED COMPETENCIES FRAMEWORK FOR LEADERSHIP DEVELOPMENT IN PUBLIC SECTOR BANKS-2011

INDIVIDUAL	PERSONALITY	LEADERSHIP	BUSINESS	KNOWLEDGE	PROFESSIONAL
Courage	Analytical skills	Developing staff	Branch banking	Awareness and use of information technology	Inspection and audit
Commitment	Communication	Leading and managing people	Business development	Industry awareness	Administrative skills
Credibility	Decision making	Developing organization	Customer focus	Information processing skills	Corporate banking
Focus on results	Learning	People skills	NPA management	Product or process innovation	Credit cards
Initiative	Problem solving		Organization culture		Credit management
Integrity	Negotiation		Regulatory compliance		Export finance
Self confidence	Team working		Relationship management		HRM
Self awareness			Stakeholder management		Housing finance
			Strategic thinking		insurance
					Infrastructure finance
					Information technology
					International banking
					Investment banking
					Marketing
					Micro finance
					Mutual funds
					Non-banking services
					Project finance
					Recovery and asset management
					Retail banking
					Risk management
					SME finance
					Social banking
					Trade finance
					Treasury and foreign Exchange management
					Wealth management
****1,2,3,4,5,6,7,8**	****1,2,3,4,5,6,7,8**	****2,3,4,5,6,7,8**	****2,3,4,5,6,7**	****3,4,5,6,7,8**	****Any two or three domains as per aptitude and choice for all levels from 1 to 8**

**Competencies identified are marked level wise 1 to 8 ie., from Junior Management Grade /Scale I officer (Officer at entry level) to Chairman and Managing Director level (Highest level for any Bank)*

*** Numbers indicate the scale or grade of managers for whom the specified competencies are required for their effective development.*

ANALYSIS OF THE FRAMEWORK

The competency framework has been developed with inputs obtained during the structured interviews with bankers from public sector banks. The competencies identified have been classified under six levels each of which are explained below.

COMPETENCIES AT INDIVIDUAL LEVEL
In the current competitive business scenario, only competent individuals can handle the banking operations effectively and efficiently, who requires certain basic qualities on the part of an individual. Banks needs to focus on preparing leaders for tomorrow. Tomorrow's bankers need to have competencies like courage, commitment, credibility, focus on results, initiative or drive, integrity, self confidence and self awareness. These competencies are required not only for leaders at higher levels but also for managers at all levels to achieve business results and be self disciplined.

COMPETENCIES REQUIRED AT PERSONALITY LEVEL
Bankers need to enhance personal effectiveness which requires focus on personal capabilities and characteristics. Another important aspect is cognitive abilities as personal effectiveness and growth depends on continuous learning. Personal capabilities include analytical skills, decision making skills, problem solving skills, team working skills, and communication skills including negotiation skills. These are required for effectively dealing with customers and securing profitable business for the bank and also render quality customer service and thereby retain customers.

LEADERSHIP COMPETENCIES
Bankers need to acquire leadership skills because banking is a service industry and the competitive edge of a bank is its people. All organizational development activities focus on people. Unless people in a bank are developed banks can not progress and grow. Hence bankers should learn people management skills so that they can lead and manage staff and handle discerning and demanding customers.

BANKING COMPETENCIES
This is the hard core area of banking operations which every banker needs to be familiar with. A leader should be good at Branch banking as the branch is the basic unit of banking operations. He should be able to develop the business with a strategic bent of mind with out sacrificing the customer focus because it is widely held that customer is the king. This requires bankers to hone up their relationship management skills. At the same time he should keep an eye on the non performing assets to have a control on the provisioning requirements as provisions eat away the hard earned profits. Managers at all levels should be well versed with the changing regulatory requirements for better compliance as non-compliance will attract penal provisions and tarnish the image and reputation of the bank. In India ownership of most of the banks are widely held and leadership at levels should understand their responsibilities towards all the stakeholders and practice good corporate governance.

KNOWLEDGE MANAGEMENT COMPETENCIES
We are living in knowledge economy. Technology explosion and proliferation of internet and information technology during the last two decades has brought a significant transformation in the banking industry at all levels. Unless the bankers aware of the changes that are happening in the industry and are able to exploit the information technology they are unable to process the large quantity of information available to them they will be out of place in the market sooner or later. These skills enable them to design innovative products and design or re-design their business processes to render cost effective services to their demanding customers.

PROFESSIONAL COMPETENCIES
Banking has grown in to such a large sophisticated domain and still expanding its frontiers on a continuous basis. Many innovative or technology oriented products like wealth management and financial planning are coming in to the fold of banking, in the name of universal banking. Now time has come for banks to build capabilities and expertise of individuals and teams not only to cater to the current needs but also to take care of the future needs. Banks should build talent pools so that they can draw talent from the pool whenever they need.
This competency framework identified 26 sub- domains of banking and proposes that every manager in his career should be prepared to handle independently at least 3 or 4 areas as mentioned in the last column of the table-2 . This will enable the bank to build a large reservoir of talent so that the bank will always be ready to exploit the emerging opportunities in any of these areas. Hence there will not be any dearth of expertise in the bank and the operations will be smooth even if key individuals leave the bank. However the individuals should be given freedom to choose their specific areas of interest depending on their aptitude so that the banks can prepare Individual Development plans (IDPs). Here HR managers and executives should play a major role in motivating people to align their individual development needs or goals with organizational requirements.

RECOMMENDATIONS
The design of leadership development programs using current methods produces leaders with current skill sets which may not be able to achieve the ambitious objectives of the Public sector banks and their future requirements. Further research needs to be done by individual banks to identify their future competency requirements and for designing a comprehensive program of leadership development so that each bank can manage it's own leadership pipeline to cater to it's future talent needs.

CONCLUSIONS
This is a pioneer study to explore the competencies under leadership development frameworks being used in public sector banks India. Most public sector banks are not using the best practices that are successful elsewhere in other sectors/ industries/ countries. Public sector banks need to invest heavily in the development of their future leaders so that they could achieve the full potential of their human resources. (Bancon, 2010).
The suggested framework if suitably adopted by public sector banks and implemented, I believe would prepare Indian public sector banks to address the leadership development challenges and help produce effective leaders that the banking industry needs in general and public sector banks' in particular; to compete for a greater global role in the 21st century.
Leadership development is only a tool and a means to an end but not an end to itself.

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THE EFFECTIVENESS OF LIQUIDITY MANAGEMENT ON THE NIGERIAN ECONOMY

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ABSTRACT

Within the context of risk integration, this study set out to empirically analyze the effectiveness of liquidity and asset management on the economies of developing nations with reference to Nigeria. The work examined how liquidity management has affected the economy considering some explanatory variables of balance of payments, exchange rates, international liquidity, and broad money supply in relation to the real gross national product as dependent variable. The study revealed significant relationships in terms of the degree of effectiveness. In the light of this, the null hypotheses were rejected while the alternative hypotheses were upheld. Some cogent and credit policy formulation recommendations were preferred in line with the result of the findings. This framework of the study uses the econometrics approach of ordinary least squares while the EVIEWS statistical software justified the method of analysis, using annual data of Central Bank from 1979 to 2008 for asymptotical relevance and credence.

KEYWORDS
Value at Risk, Holding Period, Variance Normal Mixture, Tail Dependence, Regression.

INTRODUCTION
Liquidity conditions interact with market risk and credit risk through the horizon over which assets can be liquidated. To face the impact of market liquidity risk, risk managers agree in adopting a longer holding period to calculate the market VaR (Value at Risk) The liquidity of traded products can vary substantially over time and in unpredictable ways and moreover, banks' exposures to market risk and credit risk vary with liquidity conditions in the market. The prior comment suggest a stochastic description of the time horizon over which a portfolio can be liquidated while the latter highlights a dependence issue. The holding period of a risky portfolio is static. It could be reasonably flexible.

Liquidity and solvency are the divinely ordained twins which are frequently indistinguishable. This is because; an illiquid bank can rapidly become insolvent and an insolvent bank illiquid. The merits of having done so are clearly revealed by the stronger capital positions of most money deposit banks. While the downwards trend in capital adequacy is reversible, that of liquidity may not be reversible.

To make the general idea, it is necessary to distinguish between the two processes:

1. The daily P&L of the risky portfolio;
2. The P&L of disinvesting and reinvesting in the risky portfolio.

What exactly is the distribution of responsibility for liquidity management between money deposit banks and Central Banks! Some are of the opinion that responsibility should be totally borne by the Central Bank. Some however are of the opinion that a call for a return to more traditional banking practices is now.

On maturity transformation, it is indeed ideal to determine how long should a bank be in a position to continue to meet its commitments if the wholesale markets on which it has relied upon previously dried up suddenly!

Another problem in this work is for the monetary authorities are the tenor of their operations. The financial crisis may not be related to insufficiency of funds but to concerns about the availability of funding to meet future financial commitments.

We assume no transaction costs, in order to fully represent the liquidity risk through the holding period variability. Therefore, even if the cumulative P&L is the same for the two processes above on the long term, the latter has more variability than the former; due to variable liquidity conditions in the market and a third process could describe the dynamics of such liquidity conditions.

The main objective of this work is to analyze the efficacy of liquidity management on developing economies such as Nigeria. In line with this are the specific objectives of the study is set to determine the extent of government involvement and intervention in the liquidity issue;

Examine and also evaluate the ways and manner in which government involvement is executed or actualized to bring about stability in the polity; determine the main reason for government intervention.

For the purpose of this work, the following hypotheses stated in Null form are of relevance.

Ho1: There is no significant relationship between liquidity management and balance of payment.

Ho2: There is no significant relationship between money supply and gross domestic product.

REVIEW OF RELEVANT LITERATURE
The liquidity-adjusted VaR or Expected Shortfall (ES) of a risky portfolio as the VaR or ES of portfolio returns calculated over the horizon defined by the SHP process, which is the `operational time' along which the portfolio manager must operate, in contrast to the `calendar time' over which the risk manager usually measures VaR Earlier literature on extending risk measures to liquidity includes several studies. Jarrow and Subramanian (1997), Bangia et al. (1999), Angelidis and Benos (2005), Jarrow and Protter (2005), Stange and Kaserer (2008), Earnst, Stange and Kaserer (2009), among few others, propose different methods of extending risk measures to account for liquidity risk. Bangia et al. (1999) classify market liquidity risk in two categories: (a) the exogenous illiquidity which depends on general market conditions, is common to all market players and is unaffected by the actions of any one participant and (b) the endogenous illiquidity that is specific to one's position in the market, varies across different market players and is mainly related to the impact of the trade size on the bid-ask spread. Bangia et al. (1999) and Earnest et al. (2009) only consider the exogenous illiquidity risk and propose a liquidity adjusted VaR measure built using the distribution of the bid-ask spreads. The other mentioned studies model and account for endogenous risk in the calculation of liquidity adjusted risk measures. In the context of the coherent risk measures literature, the general axioms a liquidity measure should satisfy are discussed.

None of the above works however focuses specifically on our setup with random holding period, which represents a simple but powerful idea to include liquidity in traditional risk measures such as Value at Risk or Expected Shortfall. When analyzing multiple positions, holding periods can be taken to be strongly dependent, in line with the initial classification of Bangia et al (1999)

Under the univariate case if one uses a 99% Value at Risk (VaR) measure, this will be the first percentile and the request will be positive. This implies that the horizon at future times can both increase and decrease, meaning that liquidity can vary in both directions. The standard example of a time inconsistency dilemma relates to the people handling emergency situations as they arise. Only recently, the banks have been erecting strategic dispositions for the benefit of their potential and existing customers. Such time inconsistencies issues are usually hard to resolve especially in the middle of crisis similar to the global economic meltdown. It is often worth noting, although not all of the aspects of a present crisis is foreseeable by the regulators and central banks more widely.

They did not just have the instruments or even, the strong will to do anything positive. If trouble strikes, the livewires are put in active mode and coupled with extra liquidity being provided on easy life terms, there is encouragement for the banks to do much more.

There are a large number of choices for positive processes: one can take lognormal processes with or without mean reversion, mean reverting square root processes, squared Gaussian processes, all with or without jumps. This allows one to model the holding period dynamics as mean reverting or not, continuous or with jumps, and with thinner or fatter tails.

Mixtures of distributions have been used for a long time in statistics and may lead to heavy tails, allowing for modeling of skewed distributions and of extreme events. Given the fact that mixtures lead, in the distributions space, to linear (convex) combinations of possibly simple and well understood distributions, they are tractable and easy to interpret.

Extreme behaviour on the single variables is modeled for example by heavy tails in the marginal distributions of the single variables. Extreme behaviour in the dependence structure of say two random variables is achieved when the two random variables tend to take extreme values in the same direction together. This is called tail dependence, and one can have both upper tail dependence and lower tail dependence. More precisely, but still loosely speaking, tail dependence expresses the limiting proportion according to which the first variable exceeds a certain level given that the second variable has already exceeded that level. Tail dependence is technically defined through a limit, so that it is an asymptotic notion of dependence. To tail, between two random variables is best expressed by rank correlation measures such as Kendall's tau or Spearman's rho. In case the returns of the portfolio assets are jointly Gaussian with correlations smaller than one, the adoption of a common random holding period for all assets does not add tail dependence, unless the commonly adopted random holding period has a distribution with power tails. Hence if we want to rely on one of the random holding period distributions, we need to introduce upper and lower tail dependence in a multivariate distribution for the assets returns. We need to adopt a common random holding period for all assets that is Pareto or Inverse Gamma distributed.

Since multivariate SHP modeling is a purely theoretical exercise, nonetheless a lot of financial data is being collected by regulators, providers and rating agencies, together with a consistent report on theoretical and statistical studies. This will possibly result in available synthetic indices of liquidity risk grouped by region, market, instrument type, etc.

Dependences between liquidity, credit and market risk could be an interesting exercise to calibrate the dependence structure between a liquidity index, a credit index and a market index in order to measure the possible dependence between them. The risk manager of a bank could use the resulting dependence structure within the context of risk integration, in order to simulate a joint dynamics as a first step, to estimate later on the whole liquidity-adjusted VaR by assuming co-monotonicity between the variations of the liquidity index and of the SHP processes.

METHOD OF ANALYSIS

The research work will be carried out empirically by reviewing relevant literature on the effectiveness of liquidity in the economy. Secondary data obtained from the Central Bank of Nigeria will be used. On the other hand, all necessary variables will be analyzed by multiple regressions using EVIEWS statistical software. Annual data between 1979 and 2008 will be used for the study.

MODEL SPECIFICATION

The aim of this work is centered on the effectiveness of liquidity management on the Nigerian economy and other developing economies. In this instance, the variables are needed to examine the efficiency or otherwise of liquidity management on the economy. The Real Gross Domestic Product (RGDP) is the dependent variable while the independent variables includes: Balance of Payment (BOP), Exchange Rate (EXR), International Liquidity (INL) and Total Money Supply(MS).

The model specification is as follows as guided by the classical production theory.

RGDP= f (BOP, EXR, INL, MS)…………………………..1

In furtherance to the above equation 1, wt can be rewritten as;

$Rgdp = \beta^{o} + \beta^{1}bop + \beta^{2}exr + \beta^{3}inl + \beta 4ms + \varepsilon$

Where: β^{o} is the intercept while β^{1}, β^{2}, β^{3}, $\beta 4$ constitutes the various slope coefficients while ε is the error or disturbance term. The period of study covers 1979 to 2008 totaling 30 years.

RESULTS OF FINDINGS

The result of the regression analysis revealed the presence of significant relationship between the specific variables tested. In the light of this, the two null hypotheses are rejected while we upheld the alternative hypothesis.

In another vein, the Durbin Watson is very good at 1.7 which showed that there was no presence of autocorrelation amongst the variables. Also the R-squared and R-adjusted gave a very strong factor which supports our decision to uphold the alternative hypotheses. Finally, the standard error is small relative to the mean values of the dependent variable.

CONCLUSIONS

Within the context of risk integration, in order to include liquidity risk in the whole portfolio risk measures, a stochastic holding period (SHP) model can be useful, being versatile, easy to simulate, and easy to understand in its inputs and outputs. In a single-portfolio framework, as a consequence of introducing a SHP model, the statistical distribution of P&L moves to possibly heavier tailed and skewed mixture distributions. In a multivariate setting, the dependence among the SHP processes to which marginal P&L are subordinated, may lead to dependence on the latter under drastic choices of the SHP distribution, and in general to heavier tails on the total P&L distribution. At present, lack of synthetic and consensually representative data forces to a qualitative top-down approach, but it is straightforward to assume that this limit will be overcome in the nearest future.

In line with the result of findings therefore, the importance of liquidity to the health of the economy is imperative. All hands must be on deck to make it happen. Efficient liquidity management coupled with a strong risk management posture is not negotiable.

RECOMMENDATIONS

The following policy recommendations becomes relevant in order to improve the management and measurement of liquidity exposures in less developed nations of which Nigeria is one.

1. Due process must be followed in all financial dealings so as to put to the front burner the concept of transparency.
2. In line with the above, any erring officials should be brought to book instantly so as not to encourage negative compromise.
3. The need to have an enhanced inflow base and this will be able to give us a positive balance of payment position at all times.
4. The negative attitude of most underdeveloped nationals to foreign products, values and culture should be checkmated. This will bring about the required change in terms of self reliance and financial independence.
5. Efforts should be made to reduce external sector borrowing in financing balance of payment deficit. This may have an adverse effect on the country's resources.
6. The government should be focus and have an economic blueprint. In the absence of this, the zeal to advance may be lost 'ab initio'.
7. The level of corruption and self centeredness in most developing nations is very high. Genuine efforts must be put in place legally to put them on the path of restoration and excellence.

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APPENDIX

TABLE 1: RELEVANT DATA ON THE REQUIRED VARIABLES FOR ANALYSIS

YEAR	BOP	INL	MS	EXR	RGDP
1979	1868.9	3238.2	10224.6	0.5605	29948.0
1980	2402.2	5646.3	15100	0.5445	31546.8
1981	3020.8	2593.6	16161.7	0.61	205222.1
1982	1398.3	906.9	18093.6	0.6729	199685.3
1983	301.3	495.4	20879.1	0.7241	185598.1
1984	354.9	1125.6	23370	0.7649	183563
1985	349.1	1492.4	26277	0.8938	201036.3
1986	7571.2	5388.2	27389.8	2.0206	205971.4
1987	159.2	3729.3	33667.4	4.0179	204806.5
1988	2294.1	9520.5	45446.9	4.5367	219875.6
1989	8727.8	22444.6	47055	7.3916	23679.6
1990	18498.2	44794.0	68662.5	8.0378	267550
1991	5959.6	55393.8	87499.8	9.9095	265379.1
1992	65271.8	70616.1	129085.5	17.2983	271365.5
1993	13615.9	89606.3	198479.2	22.0511	274833.3
1994	42623.3	51197.8	266944.9	21.8861	275450.6
1995	1953316	102748.1	318763.5	21.8861	281407.4
1996	53152	229502.2	370335.5	21.8861	293745.4
1997	1076.3	308534.9	429731.3	21.8861	302022.5
1998	220675	221530.9	525637.8	21.8861	310890.1
1999	326634	695734.8	699733.7	92.6934	312183.5
2000	314139.2	1274135.4	1036079.5	102.1052	329178.7
2001	24738.7	1458124.3	1315869.1	111.9433	35994.3
2002	563484	1378220.9	1599494.6	120.9702	433203.5
2003	162298	1475712.2	1985191.8	129.3565	477533
2004	1124157	2712527.2	2263587.9	133.5004	527576
2005	678781.8	3822705.2	2814846.1	132.147	561931.4
2006	0.1	5229215.43	4027901.7	128.6516	595821.6
2007	0.0	713566.475	5349253.3	124.75	634251.1
2008	0.0	934909.25	8518489.2	119.78	674389.0

Source: Central Bank of Nigeria

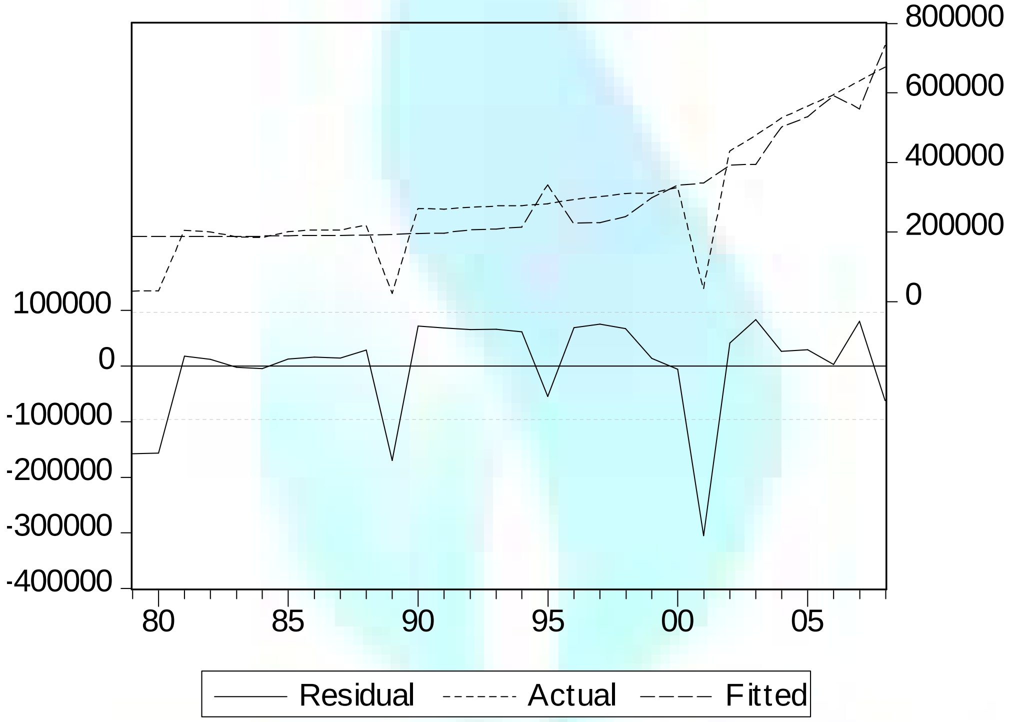
TABLE 2: DATA ANALYSIS

Dependent Variable: RGDP
Method: Least Squares
Date: 11/26/10 Time: 05:37
Sample: 1979 2008
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOP	0.061792	0.046226	1.336736	0.1933
EXR	375.8567	704.1067	0.533806	0.5982
INL	0.024786	0.023344	1.061764	0.2985
MS	0.056575	0.014469	3.910054	0.0006
C	186789.0	23979.16	7.789638	0.0000

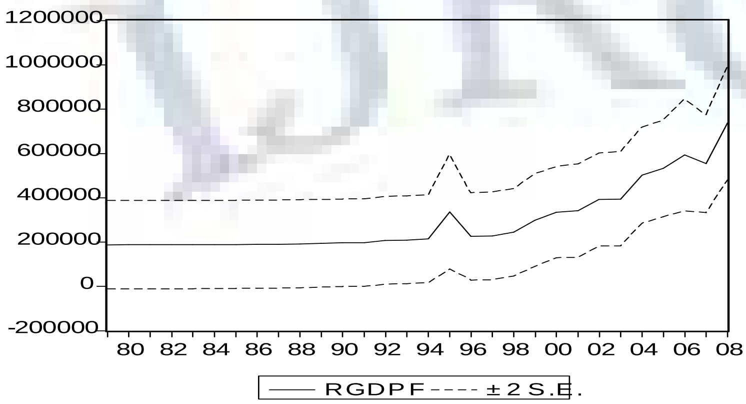
R-squared	0.735710	Mean dependent var	293854.6
Adjusted R-squared	0.693424	S.D. dependent var	174652.2
S.E. of regression	96703.74	Akaike info criterion	25.94770
Sum squared resid	2.34E+11	Schwarz criterion	26.18124
Log likelihood	-384.2156	F-statistic	17.39829
Durbin-Watson stat	1.720595	Prob(F-statistic)	0.000001

GRAPH 1: RESIDUALS



Source: Eviews

GRAPH 2: FORECASTS



Forecast: RGDPF
Actual: RGDP
Forecast sample: 1979 2008
Included observations: 30

Root Mean Squared Error	88278.03
Mean Absolute Error	61307.84
Mean Abs. Percent Error	97.22730
Theil Inequality Coefficient	0.131945
Bias Proportion	0.000000
Variance Proportion	0.076579
Covariance Proportion	0.923421

Source: Eviews

MICROFINANCE IN CAPE COAST METROPOLIS: A BASELINE SURVEY

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ABSTRACT

The success of the intervention partly depends on research to assess the impact for future directions in the microfinance landscape. In Ghana most studies on baseline surveys have focused on outreach and performance indicators that focus on how well clients are doing with a few from the institutional point of view which can be used as a basis for future research. The success of the microfinance industry does not only depend on impact assessment from client perspective but also on availability of institutional database for future research. With Cape Coast as the study area in Ghana, the paper attempts to establish and provide some baseline data from the institutions. The study interviewed 18 MFIs and data analysis was purely descriptive. Results indicate that Rural and Community Banks (RCBs) have low capitalization and it is time for RCBs to go listed on the stock market. Credit Unions (CUAs) have high capitalization and it is believed that establishment of apex bank for CUA will be in the right direction. Women clients far outweigh men clients as supported by the literature except the case of S&Ls. The paper breaks new ground in concluding with establishing Apex body for CUAs and advocating for RCBs get listed on a hybrid Stock Exchange. MFIs are encouraged to make information available to research institutions in order to facilitate research in the industry. Apex bodies need to collaborate with research institutions by making funds available for more empirical work and orientation of MFIs on the need for research in microfinance.

KEYWORDS
Cape Coast Metropolis, Credit Unions, Microfinance, Rural and Community Banks.

INTRODUCTION

Microfinance is the provision of financial and non-financial services to low income groups and the vulnerable in society. In recent times the concept has become a new development tool for poverty alleviation by generating employment, increasing income and creating wealth. Even though microfinance has become popular over the last three decades, it has been with us for years. For example the concept of microfinance is not new in the Ghanaian context. It has always been common practice for people to save or take small loans from individuals and groups within the context of self-help in order to engage in small retail businesses or farming ventures. Anecdotal evidence suggests that the first credit union in Africa was probably established in Northern Ghana in 1955 by the Canadian Catholic missionaries that were there at the time. However, *Susu*[1], which is one of the current microfinance schemes in Ghana, is thought to have originated in Nigeria and spread to Ghana from the early 1900s. Over the years, the microfinance sector has thrived and evolved into its current state thanks to various financial sector policies and programmes such as the provision of subsidized credits, establishment of Rural and Community Banks (RCBs), the liberalization of the financial sector and the promulgation of PNDC Law 328 of 1991, that allowed the establishment of different types of Non-Bank Financial Institutions (NBFIs), including savings and loans companies, finance houses, and credit unions (Bank of Ghana, 2007). Due to regional differences in most countries, regional comparison of microfinance activities might not be all that appropriate in a particular country. Therefore, regional, district and community level studies may provide a deeper understanding and broader picture about microfinance activities. It is in this direction that the current study focuses on Cape Coast to explore the dynamics of delivery issues peculiar to the metropolis.

In Ghana, Ghana Microfinance Institutions Network (GHAMFIN) continues to champion research and capacity building in the sub-sector. The Ministry of Finance and Economic Planning (MoFEP) collaborates with MFIs to undertake research at the macro level and a few micro analyses. To promote microfinance activities in Ghana further research need to be undertaken at the local community levels because most initiative undertaken by government and development partners can be brought to the public domain through data availability. It must be acknowledged that in Africa SME finance is constrained by lack of data and policy making for the sector is severely constrained by the lack of data that would allow a better understanding of the problems and performance of on-going initiatives (Isern et al ,2009),

Most studies on baseline survey have focused on outreach and performance indicators that focus on how well clients are doing with a few from the institutional point of view which can be used as a basis for future research. At the institutional level, data gathering and dissemination are weak within and between institutions. The lack of common benchmarks, methods for measuring and information sharing further inhibits the performance of the sub-sector. The success of the microfinance industry therefore does not only depend on impact assessment from client point of view but also on availability of institutional database for future research. Country wide research and data collection is very useful but has some limitations. For one, there is a greater disparity in demographic characteristics that could affect the performance of microfinance institutions (MFIs) operating in these regions. Secondly, national and regional comparisons may be misleading. In this regard district level analysis could give a true picture of MFIs activities and even client performance within the microfinance sub-sector. The main objective of this current study is to document some data on MFIs in Cape Coast Municipality. Among the specific objectives of the paper are to:

1. Provide information on MFIs operating in Cape Coast
2. Establish the delivery mechanisms of MFs in Cape Coast
3. Identify the main challenges of data collection and research in microfinance in Cape Coast Metropolis
4. Propose some ways of deepening and collaborating research between MFIs and research institutions.

In answering the above objectives, the following research questions are posed: 1. what is the delivery mechanisms with regards to target client, collateral requirements, products and services availability, and terms of repayment? When were MIs established in the metropolis? What categories of MFIs operate in the metropolis? The paper proceeds with literature review on microfinance in Africa and Ghana; section three presents methods for the study; section four presents and discuses results whilst section five concludes with the way forward.

LITERATURE REVIEW

THEORETICAL ISSUES

The theory of finance posits that low income groups in the economy lack access to finance from the formal traditional banks for several reasons. One, the informal sector entrepreneurs do not have enough information about available products offered by the formal commercial banks (the issue of information asymmetry). Moreover, imperfect information significantly increases default risks caused by adverse selection, moral hazard, and strategic default (Stiglitz, 1990; Ghatak, 1999), which make formal banks reluctant to offer services to the poor who cannot supply sufficient collateral to secure their loans. Two, due to high

[1] According Annim, 2011, susu is small and very regular cash deposits made by individuals to a trusted person of which withdrawals can be made at anytime but subject to a proportional fee that is based on the duration of the transaction.

transaction costs (eg. Dusiki, 2008) most low income group (who constitute majority of the informal sector) do not possess the required collateral to secure loans for productive ventures.

As a consequence, poor households tend to be excluded from formal financial services which in turn prevents the poor from investing in various profitable projects, smoothing consumption, and improving their ability to cope with various unexpected shocks (Okten and Osili, 2004; Conning and Udry, 2007). Theoretically, the poor has the potential for paying higher interest rates making them potential users of microfinance product since MFIs charge higher rates than traditional commercial banks.

MICROFINANCE IN AFRICA

Microfinance targets women in most countries. ADB (2007) in a study in the Philippines on microfinance projects found that 92% of beneficiaries were women in microenterprises. Two indicators usually used to assess MFIs performance are number of borrowers and savers and their penetration rates. According to MIX[2] and CGAP[3] report (2008), in Africa and as of 2007 there were 10 countries that topped in terms of penetration rates for borrowers and savers. Even though average loan size is also an important indicator, microfinance in general is expected to reach out to more clients (savers and borrowers) thus making these two indicators very important. In Africa, Ethiopia has the highest number of borrowers (1,427,000) whereas Kenya has the highest number of savers (3,172,000). Ghana ranks second (902,000) in terms of savers but fourth in terms of borrowers (315,000). Ghana's position according to MIX and CGAP analysis of the microfinance market in Africa as of 2008 makes Ghana an important player in the microfinance landscape.

In Ghana the microfinance sub-sector is categorized into five. They are RCBs, CUAs, S&Ls, FNGOs and Susu (both individual and companies). RCBs are purely formal and re regulated the Bank of Ghana (BoG) and ARB Apex Bank Limited. They are unevenly distributed across the country with the southern part having majority and the north minority. According to the ARB Apex Bank Limited, there are 131 RCBs with more than 600 branches spread across the country. Unfortunately the distribution of RCBs id skewed against the northern part of Ghana (Peprah and Muruka, 2010). The number of credit unions increased to 409 in 2009 from 371 in 2008 (CUA, 2010). S&Ls are also purely formal regulated by the BoG. S&Ls are established under the Non-Bank Financial Institutions Law (NBFL). The number of S&Ls is not known. However it is believed that there about 14 S&Ls in Ghana. FNGOs target women and teach employable skills after which they give them seed money to go into micro and small enterprise. Lending rates vary from institution to institution and across categories. In Ghana susu businesses are noted for charging the highest interest rates whereas credit union charge the lowest. FNGOs usually give grants to targeted clientele. Lending rates are either charged on reducing balance basis or straight line basis here too depending on the type and institutional policy.

TABLE 1: TOP TEN AFRICAN COUNTRIES IN BORROWERS AND SAVERS BY PENETRATION RATES

Countries	Borrowers (thousands)	Savers (thousands)	Penetration rates	
			Borrowers *(%)*	Savers *(%)*
Kenya	877	3,172	2.6	9.0
Togo	90	344	1.5	6.0
Senegal	221	654	1.8	5.0
Mali	216	409	1.5	3.0
Ghana[4]	315	902	1.4	4.0
Burkina Faso	120	523	1.0	4.0
Cameroon	135	400	0.8	3.0
South Africa	632	783	1.3	2.0
Uganda	216	482	0.7	2.0
Ethiopia	1,427	732	2.0	1.0

SOURCE: MIX MARKET AND CGAP, 2008

The penetration rate expresses number of borrowers or savers as a percentage of the country's population. In terms of penetration rates, Kenya is performing well in the microfinance sub-sector. Ghana rank sixth and fifth in terms of borrowers' and savers' penetration rates respectively in Africa. The implication is that microfinance is gaining roots in Ghana like India, Bangladesh and other Asian countries.

MICROFINANCE INSTITUTIONS IN CAPE COAST

The study focused on typical microfinance institutions in Cape Coast including Rural and Community Banks (RCBs), Savings and Loans Companies (S&Ls), Susu Companies (SCs), Credit Unions and Financial Non-governmental Organizations (FNGOs). The number of microfinance institutions continues to increase in number especially those in the informal sector unfortunately there is no data on growth of MFIs in the municipality. *Susu* businesses in general in Ghana are not properly regulated. As a result it is difficult to get the accurate number of individuals and companies that are in *susu*. In recent times in Cape Coast *susu* companies in the informal sector have been unfolding as a result of poor performance and mistrust. Lack of employment in most parts of Ghana has compelled many young men to engage daily money collection (*Susu*) as a necessity but not opportunity.

METHODOLOGY

THE STUDY AREA: CAPE COAST METROPOLIS

The Cape Coast Metropolis is bounded on the south by the Gulf of Guinea, west by the Komenda -Edina -Eguafo -Abrem (KEEA) Municipal, east by the Abura-Asebu-Kwamankese (AAK) District and north by the Twifu-Hemang-Lower Denkyira THD) District. The Metropolis covers an area of 122 square kilometres and is the smallest metropolis in the country. The capital, Cape Coast, is also the capital of the Central Region.

In 1984, the population of the then Municipal area was 7.5% of the Central Region's population, but this declined slightly to 7.4 in the 2000 Population and Housing Census. Giving this rate of growth of the population, it is projected that the Metropolis' area share of the Region's population would not change significantly in the few years ahead. Cape Coast Metropolis with its 82,291 inhabitants has a disproportionate share of the Municipal in terms of both landmass and population. According to the 2000 Population and Housing Census (PHC) by Ghana Statistical Service (GSS, 2000) male-female ratio was 57,367 males and 60,741 females. Regional figures the 2010 population and housing census has not been made available for comparison against the 2000 figures thus the analysis is based on 2000 figures.

The key developmental problems facing the Municipality, relates to the low-income levels of majority of the population. This low-income situation results from the lack of diversified employment opportunities forcing many people into informal sector activities such as petty trading, small-scale manufacturing, fishing and agriculture. This makes microfinance an important sector in the metropolis. The low incomes in the Municipality may then be attributable to low returns from agriculture, poor status of socio-economic infrastructure, and particularly agricultural support services such as credit facilities and extension services to support the farmers and fishermen. Again the poverty profile of Ghana indicated that the poverty is still pervasive in the Central region of which Cape Coast is part. For

[2] The Microfinance Information Exchange (MIX) is the premier source of microfinance data and analysis. MIX has the mission of promoting microfinance transparency through integrated performance information on microfinance institutions, investors, networks and service providers associated with the industry. MIX provides objective data and analysis with the goal of strengthening the microfinance sector.

[3] Consultative Group to Assist the Poorest (CGAP) is an independent policy and research center dedicated to advancing financial access for the world's poor. It is supported by over 30 development agencies and private foundations who share a common mission to alleviate poverty. CGAP is housed at the World Bank.

[4] The Ghana data uses the 2000 Population and Housing Census figures

example according to Bhasin and Annim (2005), the declines in poverty have been concentrated mostly in Western, Greater Accra, Volta, Ashanti and Brong Ahafo regions whilst some regions including Central, Northern, Upper East and Upper West have experienced increases in poverty.

The Municipal area has a wide range of traditional banking facilities. These include all the major commercial banks in the country, namely: The Barclays Bank of Ghana Limited, Ghana Commercial Bank Limited, Standard Chartered Bank Ghana Limited, SG-SSB Bank Limited, Agricultural Development Bank Limited, National Investment Bank, UT bank, HFC Bank Limited, Prudential Bank Limited and Zenith Bank (Ghana) Limited.

DATA AND METHOD OF ANALYSIS

The data for the study was obtained using structured questionnaires. In all cases of managers of the various institutions were interviewed and endorsed the questionnaires they answered for the purpose of credibility reliability of the data collected. Final year microfinance students administered the questionnaires after they have presented introductory letters from the Department of Economics signed by the Head of Department. The analytical technique used was basically descriptive. The data were input into Microsoft Excel to generate the ratios, averages and percentages for interpretation. The scope of the study was limited to typical microfinance institutions including RCBs, CUs, S&Ls, FNGOs and Susu Companies. Traditional commercial banks operating in the Metropolis were excluded from the current study because they were not willing to give the needed data.

RESULTS AND DISCUSSION

This section presents results and discusses the findings of the survey. Profile of MFIs, lending methodologies, outreach and capitalization issues are dealt with. The first part of this section discusses the age and lending methodologies of selected MFIs. The section proceeds with outreach of MFIs in terms of borrowers (women and men) and savers and MFIs capitalization, loan sizes and interest rates charged by the MFIs. It concludes with the challenges in conducting research within the microfinance sub-sector.

AGE AND LENDING METHODOLOGIES OF MFIS

Profile of MFIs in Cape Coast Metropolis is presented on table 3. Of the four rural banks operating in Cape Coast, the oldest is Kakum Rural Bank whiles the youngest is Twifo-Hemang Rural Bank. The oldest credit union is Monument (Cape Coast Castle) Credit Union and the youngest is Mustard Seed Credit Union. Even though Mustard Seed is the youngest in Cape Coast it has opened more branches than any other credit union in the metropolis. Rural and Community Banks and Savings &Loans Companies in Cape Coast use the individual and group lending methodologies. However credit unions use the individual lending approach only. The rational for individual lending methods are that credit unions are established by the co-operative laws and by-laws (see for example Co-operative Societies Decree No. 252 of 1968 and Bye-Laws and Articles of Association for Ghana Co-operative Credit Unions). In practice members that form credit unions constitute a form of guarantee which does need any physical collateral security and again the Section 23(a) of the bye-laws indicate that: *Loans shall be secured by the borrower's own savings and if necessary the savings of one or more members.* Section 23(b) goes on to say that: *the guarantors shall indicate the amount of their savings to be pledged as security for a loan.* This makes it possible for credit unions to grant individual loans. With the exception of credit unions all other MFIs in Cape Coast take physical collaterals. S&Ls in Cape Coast give collateralized and guaranteed loans. They request for documents covering movable and unmovable property including land title documents, vehicle ownership certificates, business registration documents, guarantees from employers (in the case of salaried workers) and other third party guarantors. There was limited data on FNGOs as they were not prepared to answer some part of the questionnaires sent to them.

TABLE 3: PROFILE AND LENDING METHODS OF SOME MFIS IN CAPE COAST

Name of MFI	Year of Est.	No. of Branches	Lending method	Collateral
Kakum Rural Bank	1983	Two	Individual and group	Yes
Mfantsiman Comm Bank	1997	One	Individual and group	Yes
Assinman RB	2006	One	Individual and group	Yes
Twifo-Hemang RB	1984	One	Individual and group	Yes
First National Bank	2008	Two	Individual and group	Yes
ProCredit S&L	2009	One	Individual	Yes
Monument Credit Union	1973	One	Individual	No
ECG credit Union	2005	One	Individual	No
Progressive Women	1993	One	Individual	No
IRS Credit Union	1996	One	Individual	No
UCC Credit Union	1998	One	Individual	No
Oguaa Teachers CU	1974	One	Individual	No
Mustard Seed CU	2006	Three	Individual	No
Methodist CU	N/A	One	Individual	No

Source: Field survey, 2010

BORROWERS AND SAVERS OF MFIS IN CAPE COAST

MFIs in Cape Coast reach out to more women than men Credit Unions have higher women outreach (82.3%) followed by RCBs (71.6). This finding collaborates with a lot of studies (see for example Rafique, 2006; Asian Development Bank, 2007) for example the first microfinance project pioneered by Professor Mohammed Yunus targeted poor women and since then microfinance has targeted women for many reasons. It is believed that women have high repayment rates, are credit worthy and fear indebtedness. S&Ls target more men than women (31.5%). One plausible reason is that S&Ls operate like traditional commercial banks in that they require physical and liquid collateral which men have control of. This gives more men opportunity to access credit from S&Ls. Table 3 shows that there are more savers than borrowers across all MFIs in Cape Coast. This confirms MIX Market and CGAP (as shown on table 1) that in Africa there are more savers than borrowers yet the level of savings is low. Probably the amounts saved by these savers are low or they only save in order to qualify for loans. It is not the number of savers that matters but the amount they save. In it has been documented that savings capacity in sub-Saharan Africa and Ghana's level of savings even fall below that of sub-Saharan Africa (Brownbridge, Gockel and Harrinton, 2000).To encourage more savings there should be proper incentives for savers to increase the amounts they save and not only to qualify for loans. In terms of savers credit unions reach out to more clients (44.8%) than any other MFI in Cape Coast. RCBs

TABLE 3: MFIS BORROWERS AND SAVERS IN CAPE COAST

MFI Type[5]	Women	Men	Total	Average[6]	Savers[7]
Rural and Community Banks	2114(71.6%)	840	2954	739	11,944
Credit Unions	5288 (82.3%)	1140	6428	918	14,228
Savings and Loans Companies	2950 (31.5%)	6420	9370	2,343	2,803
Non-governmental Organizations	N/A	N/A	N/A	N/A	N/A
Susu Companies	1650(72.8%)	618	2268	454	2752
Total					

Source: Field survey, 2010

Among the credit unions, savings is compulsory as well as share holdings. In some cases credit unions put restrictions on savings withdrawals. One pitfall of the study is that credit and savings amounts were not obtained from the institutions. These figures if they were obtained could give a useful insight into microfinance delivery in Cape Coast.

CAPITALIZATION OF MFIS

Table 4 shows the capitalization (average and total) of selected MFIs in Cape Coast. The capital size of MFIs in Cape Coast varies across type of MFIs. In the Metropolis, credit unions have total capitalization of 1,079,634 Ghana cedis (average of 154,239 Ghana cedis). Probably the large number of CUs is contributing to the higher capitalization in the microfinance market in Cape Coast. This is why CUs serve a large number of borrowers (9,370) as can be seen from table 3. The next category of MFIs with the highest capitalisation is FNGOs (600,000 Ghana cedis). Unfortunately, only one FNGO responded to the questionnaires out of a number of them operating in Cape Coast. This is not surprising because FNGOs receive donor support from abroad for target groups basically women. If just one FNGO has capital size of 600,000 Ghana cedis (more than half of the total capital of CUs), then one can imagine the total capital size of all FNGOs if they had provided us with the data. Data management in the sub-sector could be seen as major issue of concern. This underscores the need for making data available for research in the microfinance sub-sector. S&Ls and Susu businesses (individuals and companies did provide any data about their capitalization. This is one of the challenges that research in the financial sector (either formal informal) faces. S&Ls in Cape Coast complained that they have to consult their head offices before they can provide such data according their policies.

TABLE 4: CAPITALIZATION OF MFIS IN CAPE COAST

Capital (Ghana cedis)	Number of Institutions RCBs	CUs	S&Ls	SUSU Co.	FNGO
Less than 10,000	1	2	0	2	N/A
10,000-50,000	1	3	0	1	N/A
50,000-100,000	1	0	0	1	1
More than 100,000	1	2	3	1	0
Average capital Size	185,239	154,233.40	N/A	17,506	600,000
Total Capital	740, 956	1,079, 634	N/A	87,530	600,000

Source: Field survey, 2010

LOAN SIZE AND LENDING RATES

Average loan size has been used as one of the indicators of reaching out to more clients. Average loan size indicates reaching out to poorer clients. The lower the amount the more the assurance that MFIs are reaching out to poorer clients. Loan size varies from one MFI to another and also according to difference categories. Table 5 presents the average loan sizes and lending rates from three categories of MFIs that provided data on the variables. CUAs serve clients with the highest minimum and maximum loan balances as compared to RCBs and susu. This is probably as a result of their high capitalization and also the lower rates that they charge.

TABLE 5: LOAN SIZES AND LENDING RATES

MFI	Minimum Loan amount (Ghana cedis)	Maximum Loan amount (Ghana cedis)	lending rate per annum
RCBs	50	3000	40-48%
CUAs	630	5000	up to 36%
Susu	N/A	3000	40-60%

Source: Field survey, 2010

Even though susu businesses offer the highest lending rates in the metropolis, they seem to offer equally maximum loan sizes as RCBs despite comparable lower rates from RCBs. One plausible reason is that susu businesses can be approached any time and there no bureaucracies making them more customer friendly than RCBs. Again, in spite of their high rates, borrowers prefer making business with them because they are always there for clients.

WHAT ARE THE CHALLENGES OF RESEARCH IN THE MFI SUB-SECTOR?

The field survey could not capture most information on the questionnaires. Answering questions on capital size is somewhat unpleasant to most MFIs especially S&Ls and RCBs in the municipality. Susu businesses were also not prepared to declare their capital sizes. Students who went to the field were turned off several times despite the fact that they were introduced by a letter from the head of department. This left most questions unanswered. Savings and Loans Companies especially were reluctant to provide answers to the questions since most of the indicated they had to seek permission from head office. In some cases officers responsible for the answering the questions did not have time at all to provide the responses thus frustrating the field staff. Furthermore, the informal financial service providers basically the susu operators feared that their activities may be exposed to tax officers for taxation thus refusing to answer vital parts of the questionnaire. Again because most these informal financial operators have not duly registered their businesses they were reluctant to also answer the questions. Where data was provided they were not adequate or inconsistent in some cases. However, care was taking in order not to affects the results presented in this study.

[5] The study concentrated on registered MFIs. The names of the MFs interviewed have not been disclosed because permission has not been granted from these institutions to that effect.
[6] Average number of borrowers is derived by total borrowers (men and women) divided by number of institutions interviewed.
[7] The number of savers represents both male and females. The institutions could not provide us with men and women savers separately.

CONCLUSION AND THE WAY FORWARD

The objective of the paper was to assess the delivery mechanism and issues of MFIs in the Cape Coast Metropolis. The basis was to provide some database for further research and also to track performance. The study focused on traditional MFIs in Cape Coast and excludes commercial banks that are into micro financing because comparing these MFIs with traditional banks is like 'apple and orange comparison'. On the average RCBs have lower capitalization in microfinance market in Cape Coast. Is it time for RCBs to go for initial public offers (IPOs) and get listed on the stock market to increase capitalization?. The answer is no! It is rather proposed that a hybrid of stock market or mini stock market specially designed for the Rural Banking sector will can be more relevant than the main stock market. The reason is that how many RCBs will qualify to get listed on the Ghana Stock Exchange when data management is a key problem?

Lieberman et al (2008) has confirmed that "Going public" launches microfinance institutions (MFIs) into a new frontier, presenting challenges but also providing new opportunities for the institutions and the clients they serve. Going public by getting listed on the stock exchange has the potential of increasing market capitalization thus serving more clients with bigger loan sizes. RCBs in Ghana can learn the experiences of Bank Rakyat Indonesia (BRI), BRAC Bank in Bangladesh, Banco Compartamos in Mexico and Equity Bank in Kenya for their exceptional growth, financial performance and outreach as a result of going public. It is proposed that merger of RCBs could also be an alternative way of increasing capitalization and enjoy economies of scale and scope. Smaller MFIs especially RCBs can merge and pool resources to take advantage of economies of scale.

With high capitalization of CUs there is the need for effective prudential regulation and also credit unions need apex bank to manage their funds well for them. The notion that microfinance does not require collateral is no longer a reality in some countries. MFIs in Cape Coast take physical collateral. It is about time these MFIs devise alternative collateral security strategies such as social capital. Strengthening the group lending mechanism could be a way forward for effective microfinance services in Ghana. The right to information bill which is still parliament needs to be passed into a law. Even among the supervised formal financial sector access to information for research still remains a problem in Ghana despite several attempts from Bank of Ghana compelling banks and financial institutions to make information available.

The current data base will be updated each year to generate panel dataset to provide more reliable information for research. As a way forward, MFIs are to open up in terms of data collection and collaborate with research institutions to conduct empirical research and also make data available for students interested in microfinance research.

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CORPORATE SOLVENCY MANAGEMENT: HOW EFFECTIVE ARE CONTEMPORARY TOOLS?

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ABSTRACT

The spate of bankruptcy and business failures worldwide has invoked the need to look closely at the components of contemporary business models. Researchers over the years have come up with many innovations in the management of financial resources of an organization which include recent developments in solvency management tools. Three of such tools, the traditional Current Ratio, the Altman's Z-score, and the recently developed Enyi's Relative Solvency Ratio were used in a comparative study of the performance and liquidity status of 7 quoted companies in Nigeria using their annual reports. The results revealed that the Current Ratio and the Z-score models though adequate for static and historic measurement suffer from many limitations including imprecision while the Relative Solvency Ratio combines the capability of an effective indicator with the precision required of a true predictor.

KEYWORDS

Bankruptcy, Current Ratio, Insolvency, Ratio Analysis, Relative Solvency.

INTRODUCTION

Over the past decade one of the key problems facing the management of many corporations is the issue of bankruptcy and how to avoid it. The bankruptcies of General Motors, Lehman Brothers and Woolworths, the sub-prime mortgage crises in the developed economies, and the SME survival crises in emerging economies are the after effects of flawed or defective business model and this according to Sajjad (2010) has caused untold hardships to economic stakeholders of these failed businesses. In the words of Lyon (2010) the key question occupying the minds of chief financial officers for the past few years has been how to shape the finance function to better support the business.

There is no doubt that the deepening global business complexity demands for more effective insight and analysis. Cost reduction and the drive to generate more income and open new opportunities continue to occupy the centre stage of organizational managerial decisions. The fact remains that a business is as strong as its unencumbered capital base, as liquid as its working capital volume, and as dynamic and viable as its managerial decisions. Firing up the capital base of an organization lies in its ability to generate more income while maintaining low cost regime and in its ability to effectively and efficiently manage its centre of existence – the working or circulating capital. In analyzing the 2009 ***ACCA Accountants for Business Report***, Lyon 2010 stated that because of the challenging business climate, finance functions also had to devote more resources to their historic remit and core focus such as cash management, deleveraging and cost reduction. Strong finance leadership, effective IT and aligning finance strategy to the overall business were identified as the key differentiating characteristics of great finance functions.

In the opinion of Sajjad (2010), a business model is a management system that could offer decision–influencing information by explaining the infrastructures, the networks, the resources that drive the strategic direction, the business differentiators and value drivers, the implementation of the unique value proposition, the profit margins, the cash flows, and the associated internal and external risks. An exposure draft on the management commentary, issued by the *International Accounting Standards Boards (IASB)* in 2009 gives a company an opportunity to offer historical and future-oriented decision-useful information to the primary users of financial statements about the entity's financial position, performance and liquidity.

Why are we concerned now about workable business models? Why are the existing ones defective? The first line of answers to these two questions is to first define what constitutes a business model. Lucky for us, this aspect was effectively dealt with by Sajjad(2010) as above; however one element seem too stand above all other considerations - *strong finance leadership* as embodied in profit maximization and excellent cash flow management which in turn will engender and encourage robust liquidity that will ensure the continued and unhindered solvency and going-concern for the organization. Traditionally, working capital has been managed all along using the normal historical cost based liquidity measurement tools such as the *current ratio*, *capital adequacy ratio* (for financial institutions), *credit policy analysis*, *stock-turnover rate*, *asset quality* and for those who want to measure *fiscal health* of the company-the *Altman's Z score*. It is believed that the basis for using historical cost data to manage organizational solvency stems from the fact that earnings are superior to cash flows in explaining ex post intrinsic values (Subramanyam and Venkatachalam, 2007).

The above position was further corroborated by SFAC No1, FSAB 1978, para.44 which asserted that accrual based earnings is superior to cash flows in providing information about users' future cash flows. Subramanyam and Venkatacahlam (2007) defined ex-post intrinsic value as *the present value of all future payoffs to the equity investor* – in other words, the investments future profitability and liquidity.

In explaining the import of accruals on future firm growth Zhang (2007) opined that accruals capture mainly investments in working capital and this, of course, is an integral part of corporate growth. He stated further that his research findings tend to suggest that accruals capture economic fundamentals rather than just earnings persistence or quality. Though some researches believe that accruals are negatively related to future stock returns and growth (Sloan, 1996; Desai et al, 2004; Fairfield et el, 2003), they, however, attributed that behaviour to what they called accrual anomaly.

PROBLEM OF STUDY

The measurement of organizational efficiency underscores in real terms the viability and feasibility expectancy of that organization. How profitable and effective an organization becomes is a matter of how competent the overall management is. Efficiency is a function of effectiveness but the two are jointly used to appraise the consequential outcome of the operational activities of an organization which in turn determines the feasibility expectancy of that organization. Efficiency is less precise and definite than effectiveness in that it denotes the relationship existing between inputs and resultant outputs. In a comparative analysis of corporate efficiency, Kax and Kahn (1987) states that more efficient organizations produce more outputs, for the same amount of given inputs; and, therefore, performs financially better. The *going concern* ability of an organization is greatly anchored on the continued solvency of that organization. Solvency in turn is determined by the continued viability of the firm; and viability of any organizations is (most certainly) a function of the organizational efficiency. Organizational solvency must be managed in the most efficient manner as to guaranty the systematic growth and continued existence of that organization. Recent developments worldwide as highlighted above have continued to hang a big question mark on the effectiveness of traditional solvency management models such as the *Liquidity Index, Stock Turnover Rate, Credit Policy* and *Current Ratio*. To manage a firm's liquidity it is important to employ tools that are proactive rather than reactive in their general approach towards the detection and remediation of the potential problem. The most beneficial tool to any firm should be the one that would give an "advance" warning of an impending catastrophe rather than the symptoms of it, as symptoms only manifest when a patient is already under attack. This paper intends to look at some accrual based significant liquidity management models with a view to assessing the relevance, effectiveness and limitations of each model and making recommendations as appropriate.

METHODOLOGY

This study employed the empirical analyses of the annual reports and financial summaries of 7 quoted companies to test the indicative and predictive effectiveness of three solvency management models namely - the normal current ratio analysis, the Altman's Z-score model, and the Enyi's Relative Solvency Ratio (RSR) model, with incisive review of their supporting literature.

SUPPORTING LITERATURE

LIQUIDITY MANAGEMENT AND ORGANIZATIONAL EFFICIENCY/EFFECTIVENESS

The measurement of organizational efficiency underscores in real terms the viability and feasibility expectancy of any organization. How effective an organization becomes is a matter of how competent the overall management is. Efficiency is a function of effectiveness but the two are jointly used to appraise the consequential outcome of the operational activities of an organization which in turn determines the feasibility expectancy of that organization. Efficiency is less precise and definite than effectiveness in that it denotes the relationship existing between inputs and resultant outputs[8]. In a comparative analysis of corporate efficiency, Kax and Kahn[9] states that more efficient organizations produce more outputs, for the same amount of given inputs; and, therefore, performs financially better. The *going concern* ability of an organization is greatly anchored on the continued solvency of that organization. Solvency in turn is determined by the continued viability of the firm; and viability of any organizations is (most certainly) a function of the organizational efficiency.

Traditionally, accounting literature measures accruals as changes in working capital and as with fixed assets, changes in working capital represents one form of investment which forms a greater aspect of a firm's business growth. In view of its important place in the survival of any organization working capital management should be central in any business model development strategy. *Working capital management is the regulation, adjustment and control of the balance of current assets and current liabilities of a firm such that maturing obligations are met, and the fixed assets are properly serviced* (Osisioma, 1997). In the words of Andrew Harris (2006), the concept of working capital management is developed to ensure that the organization is able to fund the difference between short-term assets and short-term liabilities. However, there is more to working capital management than just meeting short-term transactional objectives because business solvency revolves primarily around the working capital base of the organization (Enyi, 2006). Liquidity is the main concept and purpose of any working capital management strategy.

Liquidity in the words of Bardia (2006), is the lifeline of a business organization upon which its sustained growth depends. Solvency is the state or ability of a firm to stay financially afloat (that is, the state of being liquid) meeting every financial obligation as they fall due without hindrance and the need to borrow further. Insolvency is the other side of it. The ultimate outcome of continued insolvency or illiquidity is bankruptcy and this has been the case of the organizations mentioned earlier..

Sellers et al.(2002) defined insolvency thus:

Insolvency occurs when

- *a corporation is unable to meet its obligation as they generally come due;*
- *a corporation has ceased meeting obligations as they generally come due;*
- *the property of the corporation at a fair value is not sufficient to enable payment of all obligations due and accruing due*[6].

To interpret this, the first type of insolvency, they referred to as *corporate insolvency*, the second, they tagged *Liquidity insolvency* and the last they called *Balance sheet insolvency*. Doetsch and Hammer (2002) identified another type of insolvency which they called *Cross Border Insolvency*. Cross Border Insolvency according to them exists where transnational firms are unable to generate sufficient revenue to satisfy their debt obligations. Their financial distress then creates a situation where assets and claimants are scattered across more than one country. The bankruptcy of the US giant *Lehman Brothers* with the attendant calls for reimbursement in Europe and Latin America is a good example of cross-border insolvency

SOLVENCY MANAGEMENT

It is one thing to come afloat but it is entirely a different ball game to remain or stay afloat. The real management of organizational solvency is vested in the efficient manipulation of the components that makeup the organization's working capital base. To begin with, *working capital* is a margin or buffer for meeting obligations within the ordinary operating cycle of the business (AARB No.43). In other words, working capital represents the circulating capital of an organization. In the true sense of it, working capital is the net difference between the organization's current assets and the current liabilities. For there to be efficiency in working capital management, Osisioma (1997) pointed out that there must exist two elements in the working capital quality namely:.

a) Necessary Components; and
b) Desirable Quantities.

He insists that good working capital management must ensure an acceptable relationship between the different components of a firm's working capital so as to make for an efficient mix, which will guarantee capital adequacy as well as make available to the management the desirable quantities of each component of the working capital. But then, what should constitute the necessary components of a firm's working capital and how much of such necessary components should be regarded as adequate or desirable? To answer the first part of the question, the necessary components of an organization's working capital will typically follow the trend normally adopted in the organization's type of business or industry. The common components of working capital for most organizations include cash, debtors, receivables, inventories, marketable securities and redeemable futures. The question as to the adequacy of each component is a matter of conjecture based on more stringent measure tailored in accordance with the need, size and scope of the operations of the firm. Insolvency and other unsavory financial problems occur as a result of the inability of the management to identify this need, size and scope and the corresponding quantity of each component of working capital necessary for them. The management of working capital is the function of *financial management* which refers to a decision making process for the prudent utilization of capital resources of a business enterprise (2000). In other words, financial management can equally be said to cover the core subject of management since it is the main objective of management to utilize capital resources prudently in the achievement of the organizational goal. The distinguishing factor however, remains that financial management requires specialization and expertise and may be concerned with mainly advises on the prudent allocation and/or re-allocation of the resources of the organization as converted into financial format. Another important aspect of financial management is that it provides the basis for business planning, investment, diversification and cash flow statements. Thus, it can be rightly assumed that the objective of financial management in any organization is pinned on the prudent management / utilization of the capital resources towards the attainment of its primary goals in business.

The first step towards attaining efficiency in financial management is to keep accurate financial records and accounts. It is from the analysis of these records that information concerning financial operations and projections can be obtained. The information obtained through the analysis then forms the basis of informed decisions on the allocation/re-allocation of the organizational capital resources. The major tools traditionally employed in the analysis of financial records are ratios.

Ratios are figures obtained by comparing actual outcome with an expected outcome usually expressed in decimal fractions, percentages and sometimes real numbers. Ratios are useful for comparative analysis of facts and for feedback. Without adequate/accurate feedback, there will be no control or corrective decision making, hence, plans and objectives may become difficult, if not impossible, to attain. The common ratios usually employed in the management of organizational solvency include:

a) Current Ratio
b) Quick /Acid Test Ratio
c) Debt /Equity Ratio
d) Debt /Total Assets Ratio
e) Capital Adequacy Ratio

f) Liquidity Index

In our empirical analysis we shall be interested only in the use of the current ratio for the following reasons:

(i) It is the most widely used and data for its computation can be readily obtained;

(ii) Detailed data needed for the computation of quick and other ratios are not published along with other financial data in published annual reports and financial summaries;

(iii) It is less ambiguous and universally accepted.

CURRENT RATIO

The current Ratio also known as the working capital ratio measures the totality of all current assets against current liabilities. The current Ratio is a crude measurement of the organizational solvency, as it affects current liabilities' creditors only. In the opinion of Jafar and Sur (2006), it is a basic measure of liquidity. The higher the ratio the more will be the capability of the company to meet its current obligations out of its short-term resources and accordingly, the greater is the margin of safety to short-term creditors. The normal acceptable current ratio is 2:1. This is based on the logic that in the worse situation, even in the event of 50% shrinkage in the value of current assets, the firm will be in a position to pay off its current obligations (Badia, 2006).

ALTMAN'S BANKRUPTCY PREDICTION MODEL

The first attempt to, perhaps, suggest a more effective way of diagnosing corporate insolvency was made by Altman (1983) in which he used the discriminate analysis technique to calculate bankruptcy ratio. This ratio which uses the Z value to represent overall index of corporate fiscal health, is used mostly by stockholders to determine if the company is a good investment. The formula for the ratio is

$Z = 1.2X_1 + 1.4X_2 + 3.3\ X_3 + 0.6X_4 + 1.0X_5$

Where

X_1 = Working capital divided by total assets

X_2 = Retained earnings divided by total assets

X_3 = Earnings before interest and taxes divided by total assets

X_4 = Market value of equity divided by the book value of total of total debt.

X_5 = Sales divided by total assets.

The range of the Z-value for most corporations is between -4 and +8; with financially strong corporations having Z values above 2.99, while those in serious trouble would have Z value below 1.81. Those in the middle are question marks that could go either way. The closer the firm gets to bankruptcy/insolvency, the more accurate the Z value is as a predictor.

A critical look at the components of the Altman's Z value formula and the interpretations reveal that, though the Z-value ratio is a milestone in the prediction of corporate insolvency, it suffers in precision and is likely to mislead the user unless, and of course, the corporation under analysis has already reached the problem spot. Also, more confusing is the range of acceptable values, users would perhaps, have preferred Z-value set in fractions or percentages as these are more or less universal and better understood than the number range used. Though, Altman rightly included working capital, retained earnings and earnings before interest and taxes in his analysis as these are the main, if not the only, determinants of corporate solvency, the inclusion of such items as market value of share and total sales serves little or no purpose in the determination of the corporate solvency. This is because you can make billions of dollar of sales and yet record losses; and as we know, it is profits that fuel continued cash flow, losses only dwindle them. In the same vein, the market value of a company's share is external and has nothing to contribute to either profitability or cash flow. Hence, the inclusion of these two in the analysis only goes further to distort the consequent Z-value outcome.

Business solvency revolves primarily around the working capital base of the organization; the fixed assets are only called upon at the critical but more agonizing stage of dismemberment when the death throes have already set in. The objective of any predictive function is to fore warn about a situation so that it can be avoided or taken advantage of. When this is lacking in a tool, then the tool becomes ineffective. Nevertheless, Altman's work is still a very useful reference point in the analysis and study of business insolvency.

ENYI'S RELATIVE SOLVENCY RATIO (SOLVENCY PREDICTION) MODEL

The quest for a more reliable solvency indicative and predictive tool lead to the development of the operational break-even point (OBEP) and the relative solvency ratio (RSR) by Enyi Patrick Enyi as part of a PhD thesis work in the year 2005.

OPERATIONAL BREAK-EVEN POINT (OBEP)

One of the cardinal tools introduced with the development of *Enyi's Relative Solvency Ratio model* is the operational break-even point. The operational breakeven point can be defined as "*the point or stage of activity where cumulative contribution margin on recovered production outputs equal the total cumulative production costs and losses of the learning periods*" *(Enyi, 2005)*. In other words, it is the point where the firm has made enough contribution to cover all attributable costs. At this point, production, marketing, technical, labor and managerial inputs have become normal and are efficiently combined.

The OBEP is measured in number of production/activity cycles. These cycles may be in days, weeks or months but the general and most common assumption as used in this study is in weeks. The operational break-even point is predicated on the notion that the successful set up and survival of any business will depend partly on the entrepreneurial skill of the owners or managers and to a greater extent on the availability of adequate capital. Where the capital is inadequate, the ultimate result will be early liquidation unless there is a saving grace. Reason being that in the early stages of a business, there will exist some initial *learning* problems which diminish with time as they are detected and solved. The point of activity where these problems disappear completely is the firm's stabilization point or operational perfection point. This stabilization point is not the same as the operational break-even point. The stabilization point is usually reached first and earlier than the operational break-even point. Though a low level of capital may get to the stabilization point but to get to the operational break-even point and beyond will depend on the availability of adequate capital as well as the application of a robust mark-up ratio policy. If the initial capital invested is inadequate, the learning problems will deplete it to a point where it will become so weak and unable to keep the business going when stabilization is attained. Here, *an organization is at a* ***learning*** *stage where it finds it difficult to make normal profit in a thriving business environment*. The formula for the measurement is:

$OBEP = (1+m) / 2m$

Where,

m = mark-up ratio

OBEP = Operational Break-Even Point

MARK-UP RATIO (MUR)

The mark-up ratio is important in the measurement of operational break-even point. The mark-up ratio, here indicates remotely the competence and ability of the management of a firm to recover costs and consequently maximize profit (Enyi, 2005). A firm's long-term survival depends on its ability to sell its products at prices that will cover costs as well as provide a profit margin that will ensure a reasonable rate of return to its investors (Glautier and Underdown, 1997). Also Morse and Zimmerman (1997) posited that pricing decision is one of the most important aspects of a manager's job because if the price of a firm's products or services is set too high, no one will buy the product, and insolvency condition will set in. Likewise, if the price is set too low, the firm will generate sales but will not be able to cover all costs and this can also lead to the firm's failure.

The mark-up ratio (MUR) is measured by dividing the profit before tax (PBT) with the total operating cost (TOC). Total operating cost is measured by deducting the profit before tax from the total sales (TS) i.e. *overall turnover*.

MUR = PBT / TOC

PBT = TS – TOC

TOC = TS – PBT

WORKING CAPITAL REQUIRED (WCR) AT OPERATIONAL BREAK-EVEN POINT

Arriving at the firms' operational break-even point is one part of the story. The other part lies in estimating the volume of working capital adequate enough to sustain and improve on the operational break-even. This type of estimation is a superior measurement of capital adequacy, because it is a working capital estimate relative to the competence and size of the organization's operations. The formula is:

WCR = (TOC / 52) * OBEP

Where,

TOC = Total Operating Cost = TS - PBT

TS = Total Sales

PBT = Profit Before Tax

Here, the 52 represents the number of weeks in a year; assuming that all firms stock up for at least one week's operation. However, 300 and 12 may be used to represent days and months but our study shows that weekly usage is more appropriate and gives more accurate result.

RELATIVE SOLVENCY RATIO (RSR)

The relative solvency ratio measures the liquidity of a business in terms of the availability of adequate working capital against the cumulative demands of continuous production and operational. Relative Solvency Ratio is so called because it compares the available working capital with the required working capital (Enyi, 2006). It is measured as follows:

RSR = Available Working Capital / WCR

Where,

WCR = Working Capital Required at OBEP

The relative solvency ratio can help the organization to determine when external sources of financing working capital are needed and when they are no longer desirable. It can also be applied in the measurement of bank liquidity for effective financial services administration. Most importantly, the relative solvency ratio can be used to predict the likelihood of insolvency and the possible stage that insolvency is expected to occur. The likelihood of insolvency is measured as:

COI = 1 – RSR

Where,

COI = Chance of Insolvency

This is a probabilistic measurement which is expressed in decimal fraction between 0 and 1. Any value below zero indicates a highly solvent company. Values between zero and 1 indicate the degree of insolvency of the firm. Value of 1 (which is unlikely) indicates a bankrupt company while value of zero indicates that the company's fiscal health is in equilibrium. These are tabulated as follows:

TABLE 4.1: RSR INTERPRETATION TABLE

RSR	(Chance of Insolvency)	Interpretation
0	1	Company is bankrupt
0.01 – 0.25	0.99 – 0.75	Company is insolvent and tending towards bankruptcy. Company needs to be financially and managerially overhauled.
0.26 – 0.50	0.74 – 0.50	Company is technically insolvent and needs to improve on profitability.
0.51 – 0.75	0.49 – 0.25	Company has poor fiscal health and needs to improve on profitability
0.76 – 0.99	0.24 – 0.01	Company has fair fiscal health but needs improvement in profitability
1.0 and above, i.e. (>1.0)	0 and less than 1 i.e. (<1.0)	Company is fiscally healthy

The possible stage of insolvency can be measured as follows:

POI = OBEP * RSR

Where,

RSR = Relative Solvency Ratio

OBEP = Operational Break-Even Point

The result of this measurement is expressed in number of production (activity operations) cycles. It simply tells us how long the present stock of working capital can last before it is completely exhausted assuming no other source of funding operations is found.

WORKED ANALYSIS FROM SELECTED COMPANIES

Table 5.1 shows the analyses of the solvency positions of the 7 quoted firms using the three models and the attendant results for each firm:

TABLE 5.1: COMPARATIVE ANALYSES OF SOLVENCY MODELS

ID	ITEM	CADBURY(2005)	PZ-C(2007)	FMN(2007)	UAC(2006)	FBN(2007)	CAP(2007)	VONO(2003)
a	TURNOVER	29454949	577900	105668669	28403237	79299000	1986247	353872
b	TOTAL ASSETS	17800232	540800	41845588	19890002	762881000	946920	270500
c	CURRENT ASSETS	24100447	318500	40905458	12356366	746031000	1665802	256000
d	CURRENT LIABILITIES	14264010	120000	34296296	7793795	663429000	938230	197500
e	WORKING CAPITAL	9835537	198500	6609162	4562571	82602000	727572	58500
f	RETAINED EARNINGS	1401333	48500	7473927	3203589	16371000	102748	7854
g	E B I T	4944949	69000	11994898	3893668	22097000	456400	16132
h	PROFIT BEFORE TAX	3853094	68300	9791772	3058344	22097000	456400	16132
i	NO OF SHARES ISSUED	1000840	8600	1553066	1284624	10494000	210000	36266
j	MARKET VALUE PER UNIT	43.60	28.09	88.00	50.00	45.80	52.65	8.00
k	BOOK VALUE OF DEBTS	5000000	61400	13141632	611984	22101000	101942	2500
l	MKT VALUE OF SHARES	43636624	241574	136669808	64231200	480625200	11056500	290128
ENYI'S MODEL (Computations & Results)								
m	OPERATING COST (a-h)	25601855	509600	95876897	25344893	57202000	1529847	337740
n	MARK-UP RATE (h/m)	0.15	0.13	0.10	0.12	0.39	0.30	0.05
o	PRO-CYCLE COST (m/52)	492343.37	9800.00	1843786.48	487401.79	1100038.46	29420.13	6495.00
p	O-BEP ((1+n)/2n)	3.82	4.23	5.40	4.64	1.79	2.18	10.97
q	AWCR (o * p)	1881857.63	41459.88	9948682.60	2263281.78	1973841.47	64018.03	71237.25
r	***RSR*** (e/q)	5.23	4.79	0.66	2.02	41.85	11.37	0.82
s	COI (1-r)	-4.23	-3.79	0.3	-1.02	-40.85	-10.37	0.18
t	POI (r * p)	19.98	20.26	3.58	9.36	75.09	24.73	9.01
ALTMAN'S MODEL (Computations & Results)								
u	X1 ((e/b) * 1.2)	0.66	0.44	0.19	0.28	0.13	0.92	0.26
v	X2 ((f/b) * 1.4)	0.11	0.13	0.25	0.23	0.03	0.15	0.04
w	X3 ((g/b) * 3.3)	0.92	0.42	0.95	0.65	0.10	1.59	0.20
x	X4 ((l/k) * 0.6)	5.24	2.36	6.24	62.97	13.05	65.08	69.63
y	X5 ((a/b) * 1.0)	1.65	1.07	2.53	1.43	0.10	2.10	1.31
z	***Z – Score*** (u+v+w+x+y)	8.58	4.42	10.15	65.55	13.41	69.84	71.44
AA	***CURRENT RATIO*** (c/d)	1.69	2.65	1.19	1.59	1.12	1.78	1.30

DISCUSSION

We shall start this discussion by looking at the details of calculation of the solvency indicators/predictors for one of the companies (CADBURY). We represent the data as follows:

ENYI'S MODEL

Mark-Up Rate (MUR) 'm' = 0.15
Production Cycle Cost = 492343
Operational Break-Even Point (OBEP) = 3.82 cycles
Working Capital Required at OBEP = 1881857
Relative Solvency Ratio (RSR) = 5.23
Chance of Insolvency = -4.23 = Nil
Possible Point of Insolvency = 19.98 = 20^{th} cycle (Not possible)
Relative Solvency Ratio (RSR) is **4.23** points or ***423%*** above normal ratio.

ALTMAN'S MODEL

X_1 = 0.66
X_2 = 0.11
X_3 = 0.92
X_4 = 5.24
X_5 = 1.65
Altman's Z-Score = $X_1 + X_2 + X_3 + X_4 + X_5$ = ***8.58*** = Very solvent
CURRENT RATIO = ***1.69*** (This is below the normal expectation of 2:1)

Analyzing the effects of the above data starting with the Enyi's model, the company achieved a mark-up rate of 0.15 or 15% which is Sconsidered low. This is the reason why its operational break-even point is up to 3.82 cycles which can be considered high for a blue chip company like Cadbury. The production cycle cost of N492, 343,000 is the relative cost of one weeks operations assuming that a 52 week regime of annual production cycles is adopted. The operational break-even point (OBEP) at 3.82 means that the company should always hold working capital enough to cover 3.82 production cycles (in this case, 3.82 weeks) because that is the period within which the pricing policy of the company as indicated by the mark-up rate is more likely to recoup the cost of operations to enable another round of investment in working capital from earned income without recourse to outsiders credits. The assumption here is that the firm's activity level will remain the same throughout the foreseeable future. Any change in the size or volume must be subjected to a fresh computation to arrive at the new OBEP. The Working Capital Required (WCR) at OBEP of N1, 881,778,654 indicates that the company must maintain a working capital volume of at least N1.882 billion at all times to sustain current and projected activities. The relative solvency ratio (RSR) of 5.226 indicates that the company has 5.226 times of working capital (4.226 times more than it requires). This is true because while the WCR is N1.882 billion, the working capital available to the company at the balance sheet date is N9.835 billion which inadvertently translates to a -4.226 probability of insolvency; meaning that there is no foreseeable significant threat to the company's solvency status. If we are to go further to predict the likely point of insolvency, this would be given as 19.98 or simply put: the company will become insolvent if there is no inflow of income after an equivalence of 19.98 or 20 OBEP operating cycles. This is absolutely unlikely unless the company becomes dormant because 20 OBEP operating cycles for the company is the equivalence of 20 weeks or 5 months operations.

Coming to the Altman's Z-score value of 8.58; the company can be considered *very healthy* but that is all the model can offer. It does not offer other intermediate information leading to the solvency or the insolvency status. The value of the model could have been enhanced has it been designed to determine operational breakeven, the probability of becoming insolvent and predict future solvency status like the Enyi's model.

Perhaps the least effective of the three models is the universally accepted Current Ratio analysis which measures short term solvency in terms of the relative size of the current assets against that of the current liabilities. As a rule of thumb, the acceptable figure (which can be considered normal) is anything from 2:1 and above[5].

A true test case in this analysis is that of the FMN: While the current ratio is reporting a not-so-comfortable figure of 1.19, the Altman's Z model scores the company a whopping 10.15 on the Z scale (that is 2 points above the 8 points maximum). However, reflecting a more realistic value is the Enyi's RSR model which contends that the company's solvency ratio is low as indicated by the 0.66 figure in Table 5.1 above. In the opinion of the RSR model the current level of working capital available to the company is only 66% of what the company actually requires. Invariably, the company is at the risk of being insolvent and the chance or probability of doing just that is 34%. This position seems to be in line with that of the low current ratio at 1.19; but it is totally at variance with that of the Altman's Z score model. Perhaps, the seeming distortion in the Altman's Z value comes from two cardinal variables used in the computation. These are the X_4 and X_5 variables. The former takes its value from the Market Value of Equity divided by the Book Value of Debts while the latter is a function of Sales divided by Total assets. While the book value of debts may somewhat affect solvency, the market valuation of the company's shares would have no effect on it because that is external. In the same vein, the volume of sales can only influence performance when the product pricing mechanism is efficient; this cannot be the case for a company with only 0.10 mark-up rate. At N88.00 for N0.50 equity, the market value of FMN's share has significantly raised the Z value by 6.24 or 61.5% while the sales volume contributed 2.53 or 24.9% to give a total combined overvaluation effect of 8.79 or 86.75.

Another case which tends to bring the defects of the current ratio to the fore is that of the FBN. While the RSR and Z models valued FBN's solvency rate at 41.85 and 13.41 (both very high solvency values) respectively, the *current ratio* valued it at just 1.2:1; which is very low indeed, but that is absolutely incorrect. FBN is a bank and must maintain high liquidity ratio as can be seen from the *RSR* of 41.85. That is, it has 40.85 times in working capital more than what it requires for its operations; this, of course, is in consonance with the regulating authorities' liquidity requirement. Another reason for the disagreement between the *RSR* and the *current ratio* is that the *RSR* measures the solvency state of a firm based on the firm's ability to generate revenue, minimize cost and improve on its income earning capacity. In other words the *RSR* is a *DYNAMIC* measure and not a *STATIC* measure. A *static* measure like the *Altman's Z* value and the traditional *Current Ratio* direct their focus on the past and on a particular date; but a *dynamic* measure like the *RSR* focuses on the past, present and the future.

RSR focuses on the ***PAST*** because it uses historic data to analyze facts and establish subsisting relationships; it focuses on the ***PRESENT*** because it calculates the firm's Operational Break-Even Point; and it focuses on the ***FUTURE*** because it can predict the firm's chance of becoming insolvent and the stage of future operations when insolvency might occur.

POSSIBLE DRAWBACKS

All the preceding arguments on the models' drawbacks have centered mainly on current ratio and the Altman's Z score model. This is not to say that the relative solvency ratio has no demerit; far from it. One of the drawbacks on the use of the RSR is the number of assumptions one has to make. First, we have to assume that the mark-up rate, production cycle and operational break-even point is constant throughout the critical period and can be measured adequately; secondly, the procedure for measuring these may still be hazy; and thirdly, the RSR presupposes that certain volume of working capital far above immediate requirements be maintained at all time as a hedge against operational exigencies. While these drawbacks might be easily dismissed or waived, the main bone of contention is that of maintaining excess liquidity with the attendant costs to the organization. However, some organizations for some good reasons imbibed the habit of maintaining high volume of liquid assets. For instance, Microsoft Corporation maintains a cash balance enough to buy the entire airline industry twice or 23 space shuttles (Jutur, 2006). They do this for some reasons which include:

- To invest in high yielding short term investments;
- To finance their research and development;
- To acquire on going businesses;

- To fight legal battles and hold off legal risks;
- To finance stock repurchases and stock splits (bonus issues);
- To provide against future uncertainties; and
- To shield off tax from dividend payouts.

Other organizations which indulge in the practice of maintaining high volume of working capital equally have their reasoned out strategies for doing so. Maintaining comfortable solvency status might just be one of the reasons.

To drive home the point, the RSR seems superior to the other 2 measures because it is a bridge between the past, the present, and the future of improvement in corporate performance, continued solvency and the going-concern assurance of a business enterprise. This position is supported by Zhang (2007) which states that the fundamental investment information contained in accruals has a first order effect on accrual anomaly and goes well beyond that captured by contemporaneous sales growth.

CONCLUSION

Traditionally, ratio analysis is the most widely used tool the world over, to feel the pulse of a business enterprise in terms of measuring its financial standing. Particularly, the current ratio is used primarily to measure the liquidity or solvency position of a business enterprise. But as noted earlier, the current ratio has a lot of limitations especially as it affects futuristic solvency status predictions, which might probably be the reason why Edward Altman came up with a refined model called the discriminate analysis or Z-score model which has been credited with some predictive qualities. However, the Z-score itself has been found to carry on with its own limitations especially as regards accuracy and precision in its predictive abilities. Nevertheless, the good news is that the analyses based on the Enyi's Relative Solvency Ratio model seem to prove that the model has somewhat overcome the limitations noted on the performance of the two solvency models discussed previously. In deed, a true solvency status indicator and predictor may have been found in the Relative Solvency Ratio model.

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DEPOSITORY SYSTEM IN INDIA - A COMPARATIVE STUDY OF NSDL AND CDSL

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ABSTRACT

The present study is an attempt to analyze and compare the performance of NSDL and CDSL for a period of 11 years, i.e. 2000-2010. On the basis of results, it is concluded that an increase in the terms of number of companies available for demat, number of companies signed for demat, number of depository participant, number of locations, value of dematerialized stock is observed during the period under study in both the depositories, i.e. NSDL and CDSL. There is a significant difference in the performance, on an average, of both the depositories on the basis of the selected parameters. There is also a positive correlation in the performance of the depositories on the above parameters, which is also found significant. On the basis of comparative financial analysis, it is concluded that the liquidity position as measured by current ratio is better in case of CDSL as compared to NSDL. The profitability position of NSDL is better than that of CDSL as measured by return on net worth and return on capital employed. However, return on equity and EPS is low in NSDL as compared to CDSL.

KEYWORDS

Depository, Depository participants, Performance, Parameters, Liquidity, Profitability, Financial analysis.

INTRODUCTION

Technology has changed the face of the Indian stock markets in the post-liberalization era. Competition amongst the stock exchanges, increase in the number of players and changes in the trading system led to a tremendous increase in the volume of activity. The traditional settlement and clearing system has been proved inadequate due to operational inefficiencies, delay in transfer, registration, fake certificates and forgery, non availability of depositories, impeding the healthy growth of the capital market. To overcome the problems regarding the stock markets world over, many task forces were set up inducing group of 30 to suggest an alternative for the exiting settlement system, which involved physical movement of scrips. The depository system was initiated by Stock Holding Corporation of India Limited (SHCIL) in July 1992, when it prepared a concept on paper on "National Clearance and Depository System" in collaboration with Price Water House under a programme sponsored by the US Agency for International Development. Thereafter, Government of India promulgated the Depositories Ordinance in September 1995, thus paving the way for setting up of depositories in the country. SEBI notified regulations under the Ordinance in May 1996 in order to provide the regulatory framework for the depositories. Accordingly, the Government of India enacted the Depositories Act 1996 to start depository's services in India. The depository system revolves around the concept of paperless or scripless trading because the shares in a depository are held in the form of electronic accounts, i.e. dematerialized form.

Presently, there are two such depositories in India, viz. National Securities Depository Limited (NSDL) and Central Depository Services (India) Limited (CDSL). NSDL was set up as the first depository company in the country, which is sponsored by the Unit Trust of India, NSE, State Bank of India, HDFC Bank and Citi Bank; and managed by Board of Directors as a public limited company. The Mumbai Stock Exchange (BSE) in association with the Bank of India, Bank of Baroda, State Bank of India and HDFC Bank promoted CDSL as the second depository in India for dealing in the securities in the electronic form, by the name of Central Depository Services (India) Limited (CDSL). The major objective of these depositories is the growth of scripless trading, protection to the individual investor's participation in the depository and to enhance liquidity.

REVIEW OF LITERATURE

This section covers the review of literature of some of the important studies, research papers and articles on the various aspects of depository system. Shah (1996)[1] highlighted that resolution of the single vs. multiple depositories, immobilization vs. dematerialization and role of capital adequacy norms for the custodians which is helpful in quick implementation of depository system in India. Aggarwal and Dixit (1996)[2] expressed their views about the legal framework for depository system in India. They also explained the benefits of the paperless trading, responsibilities of depository or participants and eligibility criteria, etc. Dias et. al (1996)[3] pointed out the problems faced in the area of depository system due to setting up depositories by stock exchanges. Aggarwal (1996)[4] pointed out that the introduction of depository system in India will eliminate many problems like back office functioning, post-trade, post-issue work, settlement and registration work. Sarkar (1996)[5] analyzed the implications of the scripless trading and share transfer based on book entry merely due to the existence of the depository ordinance 1995. George (1996)[6] explained the role of the NSDL in revolutionizing the paperless stock settlement system of the country. He also examined the steps taken by the depository to ensure that the scripless trading system is a success and stressed on the importance of the role of the regulator in making the depository system successful. Gurusamy (1996)[7] explained that the introduction of depository system would help in transfer of securities in the capital market by a mere book entry. He also pointed out the advantages of depository system such as delay in transfer, registration, fake certificates, soaring cost of transactions, more paper work, non availability of depositories in when the transfer of securities take place by physical delivery. Rao and Pramannik (1998)[8] studied the functioning of scripless trading, rights and obligations of depository. They have also shown the relationship between depository and other agencies, relationship between depository and participant, between depository and beneficiary, depository and SEBI and relationship of depository with Companies Act. Hurkat and Ved (1999) [9] discussed the role of depository system in many advanced countries in the stock and capital markets the world over. They also analyzed the services offered by NSDL, dematerialization, re-materialization, trading and fee or charges, comparison of a bank and a depository for the benefits of the depository. Burton (2002)[10] revealed the redesign of the depository structure and procedures and said that this is a viable model system and is being monitored closely and improved on a continuing basis. Mehla and Turan (2002)[11] explored the depository system as a process, which eliminates the paper work and maintains the electronic record of the ownership of securities. Gupta (2002)[12] examined the role of SEBI which enables the investors to choose their depository and the DP to keep their securities in the electronic form and to trade in the demat segment. Ravi Shah (2002)[13] highlighted that NSDL and CDSL have changed the face of the Indian capital market. The move from an account period settlement in 'paper form only' to a T+3 settlement in pure electronic form has been achieved in a record span of few years, whereas it took anywhere between 10-20 years in most of the developed countries. Kanko (2004)[14] discussed about Duopoly Model of security settlement, which shows how pooling payment can help in using liquidity efficiently in relation to CSD (Central Securities Depositories) foreign securities. Schmiedel et. al (2006)[15] analyzed the existence and extent of economies of scale in depository and settlement systems. The study indicated the existence of significant economies of scale but degree of such economies differs by settlement, institution and region. Nishanth and Mitra (2007)[16] highlighted the trends in the growth of dematerialization in the Indian capital market. They analyzed the total turnover and demat segment turnover volume-wise and stated that dematerialization of securities is one of the major step aimed at improving and modernizing the levels of investor's protection measures. Raju and Patil (2007)[17] quantified and analyzed the impact of dematerialization on liquidity in the Indian stock market. Kanan (2008)[18] highlighted that dematerialization has certainly brought about lot of improvement in the investment habits in our country and is bane for the companies and has created havoc in maintaining the members register and in conducting the members meeting.

OBJECTIVES OF THE STUDY

The present study is conducted to achieve the following specific objectives:

1. To evaluate the performance of depositories i.e. NSDL and CDSL on the parameters like number of companies available for demat, number of companies signed for demat, number of clients, number of depository participants, number of locations served value of dematerialized stock, demat custody, etc.
2. To analyze the financial performance of NSDL and CDSL in terms of liquidity, solvency and profitability.

RESEARCH HYPOTHESES

To achieve the objectives of the study, the following hypotheses are formulated and tested:

H01: There is no significant difference between the average number of companies available for demat, signed for demat, depository participants, demat custody, number of clients, number of locations and value of stock of two depositories during the period under study.

H02: There is no correlation between the number of companies available for demat, signed for demat, depository participants, demat custody, number of clients, number of locations and value of stock of two depositories during the period under study.

H03: There is no significant difference in the liquidity, solvency and profitability of two depositories during the period under study.

H04: There is no correlation in the liquidity, solvency and profitability of two depositories during the period under study.

DATA COLLECTION AND ANALYSIS

The present study is of analytical nature, therefore the use is made of secondary data collected from various websites, publications and brochures of depository participants, research papers/articles published in various journals/magazines/newspapers and annual reports of depositories, depositary participants and SEBI for a period of 11 years i.e. from 2000-2010. The data collected have been analyzed with the help of various statistical tools like Coefficient of Correlation (r) and t-test.

RESULTS AND DISCUSSIONS

The conclusions drawn regarding the performance of NSDL and CDSL are presented in the following sections:

ANALYSIS OF BUSINESS PERFORMANCE

In this section, the performance of NSDL and CDSL is analyzed and compared on the parameters like number of companies available for demat, number of companies signed for demat, number of clients, number of depository participants, number of locations served, value of dematerialized stock, demat custody, etc.

COMPANIES AVAILABLE FOR DEMAT

Every company wants to reach its investors through any depository. This is the major aspect for measuring the performance of any depository. More number of companies available for demat shows the exponential growth of the depository. Therefore, every depository tries to add a large number of securities to the list of securities to be settled only in demat form by all categories of investors. Table-1 shows the number of companies available for providing dematerialization facilities to their shareholders. The securities available for dematerialization includes equity shares, debt instruments, government securities, preference shares, certificates of deposit as well as the units of mutual funds and exchange traded funds. As is evident from the Table, the number of companies available for demat observed an exponential growth in both NSDL and CDSL during the period under study. There is no significant difference in the average number of companies available for demat in case of NSDL and CDSL as is evidenced by t-value. Therefore, the null hypothesis can be accepted. But on the other hand, there is a high degree of positive co-relation, which is also found highly significant. Therefore, the null hypothesis cannot be accepted. The main reason behind the growth of number of companies are low transaction charges, centralized database, low cost of set up and branch set up.

NUMBER OF COMPANIES SIGNED FOR DEMAT

This is also another important aspect for measuring the performance of any depository. Generally, this parameter shows the acceptability of the depository by the investors and the reach in the market. Therefore, every depository tries to maintain their relationship with maximum number of investors. Table-2 reveals that the number of companies signed for demat have increased in both NSDL and CDSL. There is no significant difference in the average number of companies signed for demat in case of CDSL and NSDL. Therefore, the null hypothesis can be accepted. However, there is a high degree of positive correlation, which is also found highly significant. Therefore, the null hypothesis cannot be accepted. The reason behind the increase in the number of companies is to bring all the actively traded scrips under the purview of compulsory signed or settlement form.

NUMBER OF DEPOSITORY PARTICIPANTS

A depository participant is an agent of the depository. If an investor wants to avail the services offered by the depository, the investor has to open an account with the depository participant. Depository participant functions as a bridge between the depository and beneficial owner. Number of participants help to increase the business of any depository. Therefore every depository tries to increase the depository services across the country. As depicted in the Table-3, the average number of depository participants has also increased during the period 2000-10 in case of both NSDL and CDSL. A significant difference is found in the average number of depository participants in case of NSDL and CDSL at 1 per cent level of significance. Therefore, the null hypothesis cannot be accepted. On the other hand, there is a high degree of positive correlation, which is also found significant. Therefore, the null hypothesis cannot be accepted.

NUMBER OF LOCATIONS SERVED

Depository offers the unique facility for the depository participants to extend the services directly through their branch network in order to reach investors even in the remote areas. Keeping in view the shortening settlement cycles, SEBI has directed that depository participants to connect electronically all the branches and centre for the benefit of the investors which gives faster settlements. As is evident from Table-4, an increase in number of locations covered is observed during the period 2000-10 in both NSDL and CDSL. There is a significant difference in the average number of companies, which is significant at 1 per cent level. Therefore, the null hypothesis cannot be accepted. On the other hand, there is also high degree of positive correlation, which is also found significant. Therefore, the null hypothesis cannot be accepted.

VALUE OF DEMATERIALIZED STOCK

The value of securities held in the custody of depository witnessed a tremendous growth of any depository. Higher value of demat stock shows the higher growth of the depository. Therefore, every depository wants to increase their value of dematerialization stock with the help of increase in the number of participants and increase the number of accounts of the investors. As is evident from the Table-5, the value of dematerialized stock has increased in both NSDL and CDSL during the period under study. But there is significant difference at 5 per cent level of significance between the average number of companies in case of NSDL and CDSL. Therefore, the null hypothesis cannot be accepted. On the other hand, there is also a high degree of positive correlation, which is also found highly significant. Therefore, the null hypothesis cannot be accepted.

NUMBER OF CLIENTS

This aspect shows the efforts of depository in several areas like up-gradation of the technology, enhancement of operational efficiency through IT, benchmarking of quality process, cost reduction means and aggressive marketing efforts. Income of the depository is dependent on the number of clients. Therefore, every depository tries to increase its number of clients in all the segments of the market. Table-6 shows the number of beneficial owner accounts opened with both the depositories reached a crucial milestone in its life span. The focus is on building up a nation-wide depository participant network, which has paid off as there is appreciable increase in number of beneficial owner accounts. Like other parameters, average number of clients has also increased in both NSDL and CDSL during the period under study. But the difference between the average numbers of clients is found significant at 5 per cent level in case of NSDL and CDSL. Therefore, the null hypothesis cannot be accepted. This is the result of concerted efforts in several areas as up-gradation of technology, enhancement of operational efficiency through IT, benchmarking of quality process, cost reduction means and aggressive marketing efforts. All these states that demat form of holding securities has now acquired wider acceptance of the Indian capital market, as dematerialized stock will be more liquid than physical stock as it could be delivered in any segment of the market. On the other hand, there is also a high degree of positive correlation, which is also found highly significant. Therefore, the null hypothesis cannot be accepted.

DEMAT CUSTODY

This is also one of the important criteria to measure the performance of any depository. A depository can increase their demat custody by increasing its clients and number of securities dematerialized. As is evident from Table-7, the demat custody held in both the depositories witnessed a tremendous growth during the period under study. There is difference between the average demat custody of NSDL and CDSL, which is found significant at 5 per cent level. Therefore, the null hypothesis cannot be accepted. This is mainly due to the higher valuation of shares of companies represented by the new sectors of the economy i.e. information technology, communication and entertainment companies. On the other hand, there is a high degree of positive correlation, which is also found significant. Therefore, the null hypothesis cannot be accepted.

ANALYSIS OF FINANCIAL PERFORMANCE

This section includes the analysis of financial performance of NSDL and CDSL in terms of liquidity, solvency and profitability.

ANALYSIS OF LIQUIDITY

Liquidity refers to the ability of the firm to meet its short-term obligations on due dates and gives a good insight into a firm's ability to remain technically solvent in the event of adversities. The short-term obligations are met by realizing amounts from current, floating or circulating assets. If the current assets can pay off the current liabilities, then liquidity position is assumed to be satisfactory and vice-versa. The current ratio is used to analyze the liquidity position of NSDL and CDSL.

CURRENT RATIO

The current ratio is the ratio of total current assets to total current liabilities and is calculated by dividing current assets by current liabilities. The current assets of a firm represents those assets which can be, in the ordinary course of business, converted into cash within a short period of time, normally not exceeding one year and includes cash and bank balances, interest accrued on investments, sundry debtors, etc. The current liabilities are the liabilities, which are short-term maturing obligations to be met within a year and consist of sundry creditors; income received in advance, deposits from depository participants, etc. As a measure of short-term financial liquidity, it indicates the rupee of current assets available for each rupee of current liability. The higher the current ratio, the larger is the amount of rupees available per rupee of current liability, the more is the firm's ability to meet current obligations. As a convention, the minimum of 2:1 is referred to as a banker's rule of thumb or arbitrary standard of liquidity for a firm. A ratio equal or near to the rule of thumb is considered satisfactory. The idea of having doubled the current assets as compared to the current liabilities is to provide for delays and losses in the realization of current assets. However, the rule of 2:1 should not be blindly followed while making interpretation of the ratio, because firms having less than 2:1 ratio may be having a better liquidity than those firms having more than 2:1 ratio. This is so because the current ratio measures only the quantity of current assets and not quality of current assets. The current ratio of NSDL and CDSL during the period under the study is given in table 8. In case of NSDL, current ratio ranges from 1.76 (2008) to 1.46 (2000), which is lower than the ideal ratio. It indicates that considerable deterioration has occurred in the liquidity position and shortage of working capital. In case of CDSL, the ratio ranges from 1.97 (2008) to 17.30 (2000), which is higher than ideal ratio. A very high ratio may be an indicative of slack management practices. The liquidity position of CDSL, as measured by the current ratio, is better as compared to NSDL. There is a significant difference in the average current ratio of NSDL and CDSL at 5 per cent level of significance. Therefore, the null hypothesis cannot be accepted. On the other hand, there is a low negative correlation and which is also found insignificant. Therefore, the null hypothesis can be accepted.

ANALYSIS OF SOLVENCY

The term 'solvency' refers to the ability of a concern to meet its long-term obligations. The long-term indebtedness of a firm includes debenture holders and financial institutions providing medium and long-term loans. The long-term creditors of a firm are primarily interested in knowing the firm's ability to pay regularly interest on long-term borrowings and repayment of the principal amount at maturity. Accordingly, long-term solvency ratios indicate a firm's ability to meet the fixed interest and repayment schedules associated with its long-term borrowings.

FIXED ASSETS TO PROPRIETORS FUNDS RATIO

This ratio establishes the relationship between fixed assets and proprietors funds. The objective of the ratio is to find out what proportion of owners funds are invested in fixed assets. It can be calculated by dividing the fixed assets by shareholders funds. Fixed Assets are calculated after charging depreciation. Generally, the purchase of fixed assets should be financed by shareholder's equity including reserve and surplus. If the ratio is less than one, it implies that owner's funds are more than total fixed assets and shareholders provide a part of the working capital. When the ratio is more than one, it implies that owner's funds are not sufficient and firm has to depend upon the outsiders to finance the fixed assets. The Fixed Assets to Proprietors Funds Ratio of NSDL and CDSL during the period under the study is given in table 9, which shows that it ranges between 15.9 (2000) and 67.1 (2008) in NSDL, while in case of CDSL, it ranges from 0.19 (2008) to 20.7 (2000). There is a difference in the average fixed assets to proprietor's fund ratio of NSDL and CDSL which is found significant at 1 per cent level of significance. Therefore, the null hypothesis cannot be accepted. There is also a high degree of negative correlation in the ratio of fixed assets to proprietor's funds of CDSL and NSDL and is found significant. Therefore, the null hypothesis cannot be accepted.

CURRENT ASSETS TO PROPRIETORS FUNDS RATIO

This ratio indicates the extent to which proprietor's funds are invested in current assets and is calculated by dividing the total of current assets by the amount of shareholders funds. The ratio of Current Assets to Proprietors Funds of NSDL and CDSL during the period under the study is given in table 10. It ranges from 19.1 (2008) to 25.9 (2000) in case of NSDL. On the other hand, the ratio in case of CDSL ranges from 26.9 (2008) to 43.6 (2000). There is significant difference in the average rate of current assets to proprietor's funds of CDSL and NSDL at 5 per cent level of significance. Therefore, the null hypothesis cannot be accepted. However, there is a low degree of negative correlation between them and is also found insignificant. Therefore, the null hypothesis can be accepted.

ANALYSIS OF PROFITABILITY

Profits are the ultimate test of management efficiency. An organization must be able to earn adequate profits in relation to capital invested. Return on net worth, return on equity, return on capital employed and earnings per share are used to analyze the profitability.

RETURN ON NET WORTH

Net worth is also known as proprietor's net capital employed. The return is calculated with reference to profits belonging to shareholders and, therefore, profits shall be net profits after interest and tax. It is calculated by dividing the profits after interest and taxes divided by shareholders funds. Shareholders' funds include equity share capital and reserve and surplus. This ratio is one of the most important ratios used for measuring the overall efficiency of a firm. This ratio is of great importance to the present and prospective shareholders as well as the management of the company. As this ratio reveals how well the resources of a firm are being used, therefore, higher the ratio, better are the results. The ratio of return on net worth of NSDL and CDSL during the period under the study is given in table 11. It ranges from 0.15 (2000) to 0.45 (2010) in case of NSDL and exhibits a rising trend up to 2000-01 and fluctuating thereafter. On the other hand, it ranges from -0.51 (2001) to 20.58 (2010) in case of CDSL and exhibits a sudden loss in year 2000-01 and rise thereafter. The ratio in case of NSDL is better than that of CDSL because higher the ratio, the better the performance and prospect of the company. There is a significant difference between the average return on net worth of CDSL and NSDL, which is found insignificant. Therefore, the null hypothesis can be accepted. There is a low degree of positive correlation in the ratio of return on net worth of CDSL and NSDL, which is found insignificant. Therefore, the null hypothesis can be accepted.

RETURN ON EQUITY

In real sense, ordinarily shareholders are the real owners of the organization. Preference shareholders have a preference over ordinary shareholders in the payment of dividend as well as repayment of capital. Preference shareholders get a fixed rate of dividend irrespective of the quantum of profits of the company. The rate of dividend varies with the availability of profits in case of ordinary shares only. Thus, ordinary shareholders are more interested in the profitability of a company and the performance of a company should be judged on the basis of return on equity capital of the company. It is calculated by dividing the net profit after interest and taxes by equity capital. The ratio of Return on Equity of NSDL and CDSL during the period under the study is given in table 12, which ranges from 0.18 (2000) to 0.41 (2010) in case of NSDL. This shows the fluctuating trend after the sudden decline in 2001-02. On the other hand, the ratio in case of CDSL ranges from 0.04 (2000) to 0.74 (2008). The profitability position as measured by return on equity is better in case of NSDL as compared to CDSL. There is no significant difference between the average return on equity of NSDL and CDSL. Therefore, the null hypothesis can be accepted. There is a negative correlation in the average return on equity CDSL and NSDL and is also found insignificant. Therefore, the null hypothesis can be accepted.

RETURN ON CAPITAL EMPLOYED

Return on capital employed establishes the relationship between profits and the capital employed. It is primary ratio and is most widely used to measure the overall profitability and efficiency of an organization. It is the ratio of net profits before interest and taxes and capital employed. The term capital employed refers to the long-term funds supplied by the creditors and owners of the firm. The ratio of Return on Capital Employed of NSDL and CDSL during the period under the study is given in table 13. It ranges from 0.68 (2000) to 1.02 (2010) in NSDL and shows the fluctuating trend after a sudden decline in 2001-02. On the other hand, the return on capital employed of CDSL ranges from 0.073 (2000) to 0.42 (2008). The profitability position as measured by return on capital employed is better in case of NSDL as compared to CDSL. There is a significant difference between average return on capital employed of NSDL and CDSL at 1 per cent level of significance. Therefore, the null hypothesis cannot be accepted. However, there is a negative correlation in the average return on capital employed but the same is found insignificant during the period under study. Therefore, the null hypothesis can be accepted.

EARNINGS PER SHARE

EPS measures the profit available to the equity shareholders on a per share basis i.e. the amount that they get on every share held. It is calculated by dividing the profits available to the shareholders by the number of the outstanding shares. The earnings per share of NSDL and CDSL during the period under the study are given in table 14 and ranges from 1.89 (2000) to 9.18 (2010) in NSDL and from 0.42 (2000) to 4.55 (2010) in CDSL. There is a difference in the average EPS of NSDL and CDSL, which is also found significant at 1 per cent level of significance. Therefore, the null hypothesis cannot be accepted. On the other hand, there is a positive high degree of correlation between the EPS of NSDL and CDSL and is also found significant. Therefore, the null hypothesis cannot be accepted.

CONCLUSION

To sum up, there is an increase in the terms of number of companies available for demat, number of companies signed for demat, number of depository participant, number of locations and value of dematerialized stock is observed during the period 2000 to 2010 in both the depositories, i.e. NSDL and CDSL. There is a significant difference in the performance, on an average, of both the depositories on the basis of the selected parameters. There is also a positive correlation in the performance of the depositories in the above parameters, which is also found significant. On the basis of comparative financial analysis, it is concluded that the liquidity position as measured by current ratio is better in case of CDSL as compared to NSDL. The profitability position of NSDL is better than that of CDSL as measured by return on net worth and return on capital employed. However, return on equity and EPS is low in NSDL as compared to CDSL.

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TABLES

TABLE-1: NUMBER OF COMPANIES AVAILABLE FOR DEMAT

Year	NSDL	CDSL
1999-00	821	556
2000-01	2786	2671
2001-02	4172	4284
2002-03	4761	4628
2003-04	5212	4810
2004-05	5536	5033
2005-06	6022	5479
2006-07	6483	5589
2007-08	7354	5943
2008-09	7801	6233
2009-10	8124	7049

T-value = 0.72 (insignificant), Coefficient of Correlation (r) = 0.98 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-2: NUMBER OF COMPANIES SIGNED FOR DEMAT

Year	NSDL	CDSL
1999-00	918	765
2000-01	2821	2723
2001-02	4210	4296
2002-03	4761	4628
2003-04	5212	4810
2004-05	5536	5033
2005-06	6022	5479
2006-07	6483	5589
2007-08	7354	5943
2008-09	7801	6233
2009-10	8124	7049

T-value = 0.72 (insignificant), Coefficient of Correlation (r) = 0.98 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-3: NUMBER OF DEPOSITORY PARTICIPANTS

Year	NSDL	CDSL
1999-00	124	61
2000-01	186	144
2001-02	212	161
2002-03	213	189
2003-04	214	212
2004-05	216	271
2005-06	223	315
2006-07	240	365
2007-08	251	420
2008-09	275	468
2009-10	286	497

T-value = 1.34 (significant at 10% level), Coefficient of Correlation (r) = 0.93 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-4: NUMBER OF LOCATIONS SERVED

Year	NSDL	CDSL
1999-00	1425	15
2000-01	1896	256
2001-02	1648	341
2002-03	1718	414
2003-04	1719	441
2004-05	2819	532
2005-06	3017	586
2006-07	5599	634
2007-08	7204	690
2008-09	8777	468
2009-10	11170	615

T-value = 3.71 (significant at 1 per cent level), Coefficient of Correlation (r) = 0.96 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-5: VALUE OF DEMATERIALIZED STOCK (IN RUPEES)

Year	NSDL	CDSL
1999-00	461385	8188
2000-01	326184	10905
2001-02	442580	24319
2002-03	551304	36164
2003-04	966153	106443
2004-05	1447663	120959
2005-06	2478941	218242
2006-07	3142645	293865
2007-08	4376953	596607
2008-09	3106624	4594480
2009-10	5617842	8389280

T-value = 0.79 (insignificant), Coefficient of Correlation (r) = 0.73 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-6: NUMBER OF CLIENTS

Year	NSDL	CDSL
1999-00	2414000	28545
2000-01	3748000	76003
2001-02	3700000	128252
2002-03	3795604	247369
2003-04	4989734	629159
2004-05	6300723	1005772
2005-06	7560299	1861288
2006-07	7903389	2873508
2007-08	9372335	5480245
2008-09	9685568	6754840
2009-10	10585000	8129577

T-value = 3.15 (significant at 1 per cent level), Coefficient of Correlation (r) = 0.93 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-7: DEMAT CUSTODY (Rs. Crore)

Year	NSDL	CDSL
1999-00	1550	57
2000-01	3271	192
2001-02	5167	4812
2002-03	6876	821
2003-04	8369	1401
2004-05	12866	1908
2005-06	17472	2722
2006-07	20270	3125
2007-08	23690	4982
2008-09	28287	7081
2009-10	35114	7795

T-value = 3.39 (significant at 1 per cent level), Coefficient of Correlation (r) = 0.85 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-8: LIQUIDITY RATIO (in times)

Year	NSDL	CDSL
2000	1.46	17.3
2001	1.04	6.70
2002	1.36	9.39
2003	1.85	8.16
2004	1.64	3.70
2005	1.64	4.31
2006	0.99	7.15
2007	1.61	4.29
2008	1.76	1.97
2009	1.58	1.62
2010	1.67	1.78

T-value = 3.26 (significant at 1 per cent level), Coefficient of Correlation (r) = -0.31 (insignificant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-9: FIXED ASSETS TO PROPRIETOR'S FUND RATIO (Percent)

Year	NSDL	CDSL
2000	15.9	20.7
2001	38.3	20.5
2002	34.8	12.1
2003	28.2	9.3
2004	32.8	8.9
2005	37.9	8.5
2006	51.1	2.0
2007	61.7	2.01
2008	67.1	0.19
2009	69.4	2.74
2010	64.3	3.01

T-value = 6.39 (significant at 1 per cent level), Coefficient of Correlation (r) = -0.81 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-10: RATIO OF CURRENT ASSETS TO PROPRIETOR'S FUND (PERCENT)

Year	NSDL	CDSL
2000	25.9	43.6
2001	25.6	41.4
2002	25.5	52.5
2003	34.9	53.5
2004	28.5	25.3
2005	31.8	35.6
2006	18.4	60.7
2007	27.2	44.6
2008	19.1	26.9
2009	27.8	30.9
2010	28.6	31.6

T-value = 3.66 (significant at 1 per cent level), Coefficient of Correlation (r) = -0.09 (insignificant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-11: RETURN ON NET WORTH (Percent)

Year	NSDL	CDSL
2000	0.15	0.04
2001	0.25	-0.51
2002	0.07	0.02
2003	0.9	0.01
2004	0.2	0.09
2005	0.13	0.08
2006	0.15	0.11
2007	0.32	1.23
2008	0.21	0.21
2009	0.38	0.17
2010	0.45	0.21

T-value = 0.99 (insignificant), Coefficient of Correlation (r) = 0.05 (insignificant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-12: RETURN ON EQUITY (PERCENT)

Year	NSDL	CDSL
2000	0.18	0.04
2001	0.39	-0.52
2002	0.11	0.2
2003	0.16	0.01
2004	0.41	0.97
2005	0.28	0.91
2006	0.37	0.14
2007	0.27	0.22
2008	0.37	0.74
2009	0.25	0.67
2010	0.41	0.73

t-value = 0.58 (insignificant), Coefficient of Correlation (r) = 0.27 (insignificant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE-13: RETURN ON CAPITAL EMPLOYED (percent)

Year	NSDL	CDSL
2000	0.68	0.07
2001	1.01	-0.09
2002	0.25	0.03
2003	0.31	0.3
2004	0.24	0.43
2005	0.41	0.30
2006	0.57	0.29
2007	0.46	0.31
2008	0.5	0.42
2009	0.48	0.37
2010	1.02	0.39

T-value = 2.92 (significant at 1 per cent level), Coefficient of Correlation (r) = -0.30 (insignificant)

Source: Annual Reports of NSDL and CDSL (various issues).

TABLE: 14: EARNING PER SHARE

Year	NSDL	CDSL
2000	1.89	0.42
2001	3.82	0.21
2002	1.15	0.144
2003	1.62	0.098
2004	4.18	0.97
2005	2.89	0.91
2006	3.71	1.45
2007	2.08	0.18
2008	3.29	0.35
2009	3.34	3.26
2010	9.18	4.55

t-value = 2.84 (significant at 1 per cent level), Coefficient of Correlation (r) = 0.81 (significant)

Source: Annual Reports of NSDL and CDSL (various issues).

THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON CUSTOMER SATISFACTION IN HDFC BANK OF INDIA

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ABSTRACT
This paper deals with the factors that affect Electronic Banking (E-Banking) customer satisfaction. More specifically, it examines the case of an HDFC Bank branch in India which is a pioneer in introducing and applying e-banking services in India. In this framework, this paper performs a factor analysis based on the gathered results provided by customer questionnaires in order to quantify the various parameters that affect the use of an Electroni Banking system (EBS). The findings of the analysis show that although EBS in India is steadily increasing its penetration, factors like security, ease of use, and perceived usefulness of a system continue to play a major role on the final decision of the customer to adopt an E-Banking system.

KEYWORDS
Customer satisfaction, E-Banking System (EBS), Information and Communication Technology (ICT), HDFC bank.

INTRODUCTION
A growing phenomenon in monetary services is the rising use of sophisticated electronic means years.(e.g., communication and computer networks, mobile terminals, automatic teller machines, etc.) toward the growth of novel monetary services for processing electronic transactions, collaborating with business partners, or servicing customers, regardless of geographical and time limitations.

Especially lately, there is significant use of the Internet as a shared telecommunication channel for performing monetary transactions and offering bank services. The Internet is a global network consisting of numerous discrete wide area networks that use a specific set of protocols in order to interchange data successfully. The Internet, in its current form, came up for public use in the mid-1990s, with the World Wide Web, a huge collection of hyperlinked documents located in Web servers around the world available for viewing or downloading.

The integration of the Internet as a worldwide network infraconstruction with traditional banking services provided a new class of bank services, which are generally described as "E-Banking" (EB). Besides the many advantages, EB transactions imply significantly lower costs than traditional branch or even phone banking transactions, making them quite profitable and preferable for the banks. Thus, banks are moving towards the provision of multimodal EB services, offering to customer's innovative products with wider choices and at a lower cost. On the other hand, most customers are accustomed to conducting traditional transactions instead of electronic ones. They are also accustomed to touching and examining a transaction receipt after its completion. Moreover, the face-to-face contact is related to trust in business deals and transactions, while in the new environment of faceless electronic transactions, the concept of in terms of security issues like confidentiality, integrity, and authenticity. The penetration of the Internet as a useful tool in the hands of India people has risen significantly during the last five years.

The aim and objectives of this paper are the identification and quantification of the factors that affect the adoption of EBS in India. More specifically, the paper examines the EB customer satisfaction of HDFC Bank. The rest of this paper is organised as follows. The next section initially presents some ICT related to impact of technology on banking industry and an extensive literature review is presented about EB satisfaction, while the next section shows data collection analysis, which includes the research aims/objectives, the research design, and the research techniques. The paper then deals with the findings, providing specific data in order to deduce important conclusions.

IMPACT OF TECHNOLOGY ON BANKING INDUSTRY
The growths in ICT gathering, storing, dispensation and broadcast and delivery technology have influenced all features of banking activity and were regard as the main driving forces for the vicissitudes in banking manufacturing. The technology influences the banking manufacturing, mainly in the following three aspects:

1. Technology is influencing rivalry and the degree of contestability in banking.
   Due to the growth of technology, bank's superiority in ICT is deteriorated. Entry fence have been declining, new competitor have arose. Some monetary products and services have become more transparent and commodities, customer show willing to unbundled the demand for monetary products and services, all these lead to a more competitive market environment. Due to lowered entry and exist and deconstruction, for some sub-monetary markets, contestability in banking is also raised.
2. Technology influence Economy of scale:
   Competitive pressure force banks to lower their cost. Bank seeks to get economy of scale in bank procession instead of being a big bank. Bank pursues to protected the optimal business construction, and secure the competitive imperative of economy of scale. There are other options to get economy of scale, including joint venture and confederation of monetary firms. Small firms also can get economy of scale by outsourcing, i.e. buy in economy of scale.
3. Technology influence the economics of delivery
   Technology has a main impact on the way banking and monetary facilities are delivered. A wide range of alternative delivery instrument becomes available, Internet, ATM… these Decreases the dependence on the branch network as a core delivery instrument. With the growth of technology, the monetary systems are significantly over-supplied with delivery system through a duplication of net work; bank has to change their delivery strategy

CUSTOMER SATISFACTION OF E-BANKING
E-Banking is a field where research has been focused on demonstrating the various benefits of it against the traditional transactions. Towards this, the main customer benefits (Beethika, S.K. (2004), of EB is classified as:

- Service availability 24 hours/7 days a week.
- No delays and queues.
- Quick access to bank products.
- Reduction of paper usage.
- Online transfer of funds.
- Accessibility anytime and anywhere.
- Reduction of transaction costs due to automation/human-free of the required processes.
- Better utilisation of time.

On the other side, the intention to transact online is closely related to the significant reduction in operational costs, due to the decrease of the branches and the minimisation of the staff. It is widely satisfied that online banking is the inexpensive way for contribution banking services once recognised (Sathye, 1999; Robinson, 2000; Giglio, 2002). More exactly, it has been appraised that the operative cost of a outdated bank transaction is about $1.07, while the equal cost through a phone transaction is almost half; if the transaction is performed online, then the cost drops to only $0.001 (Mols, 1998; Robinson, 2000; Sheshunoff, 2000). Moreover, besides EBS being the most profitable and wealthiest segment of bank institutions (Mols, 1998; Robinson, 2000; Sheshunoff, 2000), it has been shown that EB also leads to higher levels of customer satisfaction and retention in comparison to the standard face-to-face monetary services (Polatogly & Ekin, 2001). Therefore, EBS (i.e., online transactions, payments, and money transfers) have recently increased in popularity around the world.

According to Barwise (1997), it has been estimated that 60 per cent of retail banking transactions will have been replaced by the corresponding online ones by 2009, while the total move from the traditional transactions to the electronic ones will be gradually completed, as 3G/4G mobile communication networks offer Internet access anytime, anywhere, and anyhow. From a business perspective, emphasis has been put on researching the customer satisfaction of EBS in correlation to economical, social, and psychological issues (Karjaluoto et al., 2002; Waite & Harrison, 2002; Brandley & Stewart, 2003). One of the earliest works in this field was conducted and showed that the EBS-registered bank customers are generally more satisfied than Non-EBS registered customers for the same bank services (Mols, 1998). Similarly, another early work by Sathye (1999) showed that the main factors for the non-adoption of EBS by customers are: (1) security concerns about the Internet, and (2) the lack of awareness about EBS.

These preliminary outcomes about EBS satisfaction motivated the examination also of other aspects/factors that affect EB satisfaction, such as compatibility, usefulness, and ease of use, as well as various demographic data (i.e., gender, age, marital status, ethnic background, and formal instruction of the customer) (Eriksson et al., 2004; Yoonhee, 2005; Shergil & Bing, 2005; Eun, 2001). Finally, relative advantage, complexity, compatebility, observability, and risk tolerance proved to play a crucial role in EB satisfaction (Mattila et al., 2003; Kolodinsky et al., 2004). Also, another parameter that influences the degree of EB adoption is the customer familiarity with the target-object/service, since it has been proven that experienced customers behave in a more positive way towards EB than inexperienced ones (Karjaluoto et al., 2002).

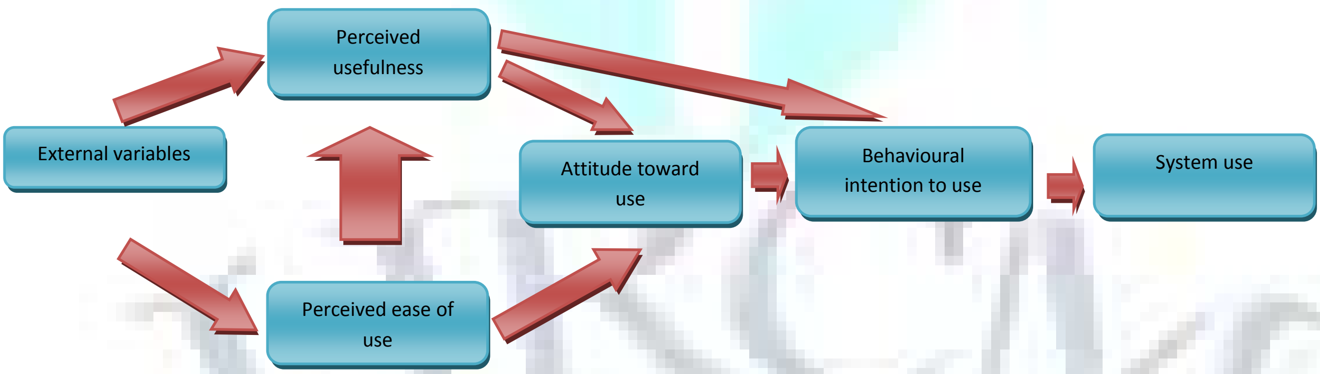
Similarly, security and privacy are considered to be closely related to EB satisfaction. From the customer point of view, security remains the vital factor of EB satisfaction. Customers still remain skeptical about security, hacking issues, and personal data/ICT misuse by third parties (Kobsa, 2001; Kobsa, 2002). Going to an online/virtual banking environment, in contrast to a face-to-face transaction with a teller, the customer feels that he or she is open to numerous risks. According to a specific study about security, customers want to lead their own acts and be in the position to know the consequences and causes of their own decisions (Baronas & Louis, 1988; Karvonen, 1999).

However, there are also many other non-psychological factors that may negatively influence EBS adaptation, since a great portion of the potential or existing customers do not have access to the Internet, making it impossible for them even to try the online services. Also, another great portion of the customers have Internet access only at work/office, where content/access filtering rules deprive the EB use.

RESEARCH METHODOLOGY

According to Technology Satisfaction Model (TSM), which is depicted in Figure 1, the system use (actual behavior) is determined by two factors: Perceived Usefulness (PU) and Perceived Ease Of Use (PEOU). These factors are related to the attitude toward the use, which in turn influences the behavioral intention to use an ICTs. More specifically, PU is defined as "the degree to which a person believes that using a particular system would enhance his or her performance" (Davis, 1989), while PEOU is considered "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989).

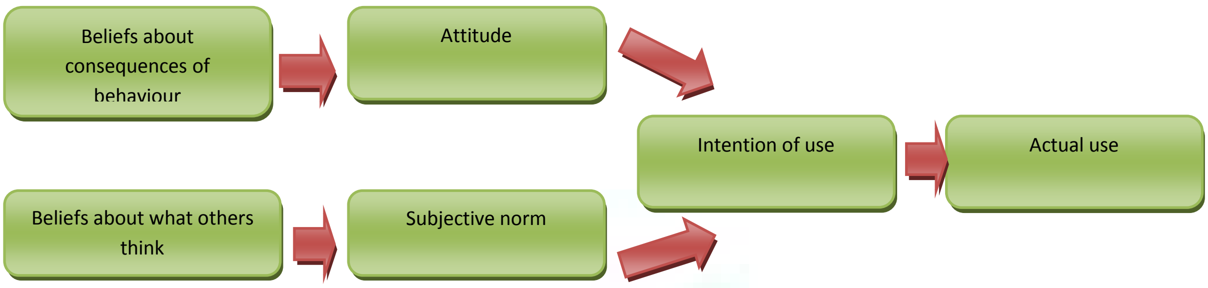
FIGURE1: TECHNOLOGY SATISFACTION MODEL



Source: Davis et al., 1989

TSM is based on the Theory of Reasoned Action (TRA) model, which has been designed to predict and understand an individual's intended behavior (Ajzen & Fishbein 1980). According to Ajzen and Fishbein (see Figure 2): "An individual executes a unique behavior that was decided by his or her Behavioral Intention (BI) determined by their Attitude (A) and a Subjective Norm (SN), including that some external variables are considered in TRA to be related to a person's behavior." In the TRA model, the term "actual use" is used in a similar way to "customer satisfaction" of a specific service, since it describes the final customer decision on using a specific service.

FIGURE 2: THEORY OF REASONED ACTION



Source: Ajzen & Fishbein, 1980

Many related studies have used TSM to measure ETS satisfaction, and have proven its validity and reliability (Mathieson, 1991; Davis & Venkatesh, 1996; Eriksson et al., 2004: Davis, 1989; Taylor & Todd, 1995), while some improvements have been proposed to it (Venkatesh & Davis, 2000). Moreover, Mathieson (1991) states that "TSM's ability to explain attitude toward using a new IT system is better than other models (e.g., TRA)."

According to TSM, PU and PEOU are both critical factors that can affect IT satisfaction (Davis et al., 1989). Therefore, an ETS that is believed to be easier than another is more likely to be accepted by customers.

- H_1: PU has a positive effect on customer satisfaction of EB.
- H_2: PEOU has a positive effect on customer satisfaction of EB.

In an empirical investigation among customers, Sathye (1999) found that customers were totally unaware about the advantages and potential of EBS, and this proved to be an obstacle against using the system.

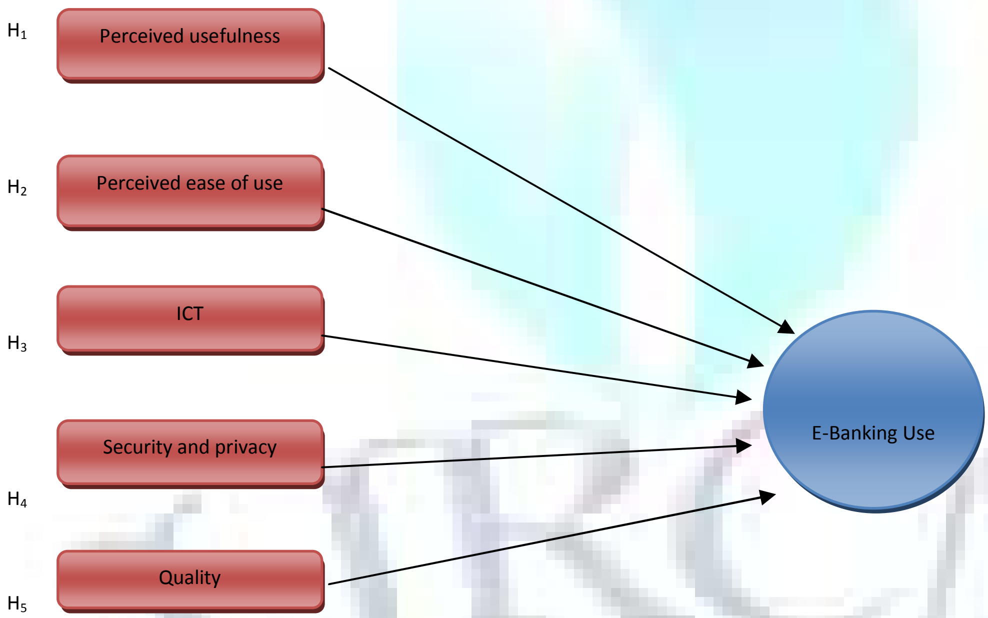
- H_3: The amount of ICT a customer receives about Electronic banking services has a positive effect on customer satisfaction of EB.

As mentioned before, the potential customers of EBS are concerned about security and privacy issues. Security is the primary factor that can prevent a customer from accepting an ETS.

- H_4: Security and privacy have a positive effect on customer satisfaction of EB.

Finally, the quality of Internet connection may influence the adoption of EBS (Sathye, 1999). So, my last hypothesis for the proposed research model is:

FIGURE 3: THE PROPOSED EXTENDED TSM MODEL



- H_5: The quality of the Internet connection has a positive effect on customer satisfaction of EB.

Consequently, the proposed extended TAM research model for measuring customer satisfaction of HDFC Bank EBS is depicted in Figure 3, and it is based on the five previous hypotheses. Considering the proposed extended TSM model, it can be derived that the TRA, which is the basis of the original TSM model, is strongly related to our five hypotheses since the five afore-mentioned hypotheses describe different aspects of the consumer's attitude and subjective norm. In order to examine the impact of these factors on the satisfaction of HDFC Bank EBS, I performed a questionnaire survey with HDFC Bank customers of three different branches in India (Bangalore, Mysore, and Mangalore). The procedure involved the collection of primary/personal data from the participants, in order to reassure the selection of a representative population sample, ensuring higher reliability than other survey techniques. The survey was conducted during the period of January–May 2010. A total of 200 questionnaires were delivered to respondents, of which 159 were returned, for a response rate of approximately 80 per cent. In order to quantify the positive/negative perception of the respondents, a Likert five-point ranking scale was used, ranging from "strongly agree" to "strongly disagree." The questionnaire included all five hypotheses of the proposed TSM model as well as some demographics data. The use of E-Banking was in this model as the dependent variable.

The aforementioned described collection of perceptual data related to EBS satisfaction provides some ICT about how it must be bridged by the IT specialists, the gap between the actual reliability of an IT system, and the psychological/subjective sense of reliability as it is perceived by the customer. Thus, such data can provide hints of making consumer friendly a technologically efficient EB system. On the other hand, perceptual data are subjectively dependent, which sometimes imposes a limitation on the objectiveness of the collected data. In the next section, I analyse the collected results, providing the factors and their impact on influencing HDFC Bank EB satisfaction.

SOLUTIONS AND RECOMMENDATIONS

In order to interpret the collected answers and measure the tendency of HDFC Bank customer towards EBS use, I used five independent factors. The five-point Likert scale was used as a technique for the fulfillment of the questionnaires. Afterwards, I used the Principal Component analysis with Varimax rotation for the computation. I should infer that two of the variables from our model related to the quality of Internet connection were not included at the end, because the dispersion of the answers was not appropriate for the extraction of accurate conclusions. Due to this, hypothesis H_5 was excluded from further analysis, since there was not a clear tendency from the customers. This may be explained by the fact that nowadays a typical Internet user has a reliable connection, and thus that factor does not affect EBS adoption. The mean age of the 159 respondents is 33.2 years, and gender is 61 per cent male and 39 per cent female. The average level of monthly income before taxation is: 25.7 per cent less than Rs. 34000, 36.4 per cent between Rs. 34400 and Rs.137000, and 37.9 per cent greater than Rs.137000. Initially, Bartlett's Test of Sphericity (BTS) showed that the variables within the same factors are strongly inter-correlated, being used to determine whether the subgroup error variances were homogeneous.

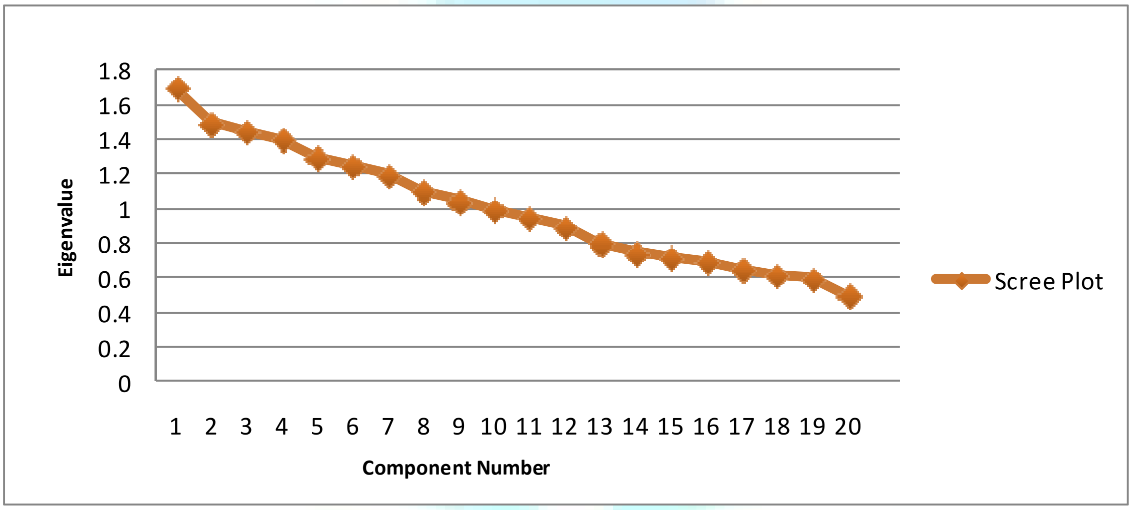
The null hypothesis being tested is: the error variances for the subgroups are statistically equal. This is a necessary and often ignored assumption, when moderated multiple regressions are used to evaluate moderating effects of categorical variables. BTS showed that it is unlikely that the correlation matrix is the 'identity', and thus the variance (and standard deviations) of the groups differ significantly.

Table 1 presents the descriptive statistics for all the variables under investigation (i.e., the mean, the standard deviation, and the number of respondents N who participated in the survey). Based on these statistics, the following outcomes can be derived about the statistically important variables that influence customers for or against EB use:

- Customers are worried about the security of EBS.
- Security plays an important role in accepting EBS.
- Perceived usefulness is an important factor in EB satisfaction.

In order to identify and quantify the various parameters that affect the adoption of EBS, I used the descriptive statistics of Table 1 for factor analysis. From this procedure, Figure 4 was deduced, which depicts the Scree Plot of the collected data, demonstrating the corresponding eigenvalues of the factors. The graph is useful for determining how many factors to retain in the analysis. Towards this, the Kaiser criterion was applied, which is also known as the "eigenvalue-greater-than-1" method.

FIGURE 4: SCREE PLOT



Thus, from Figure 4 it can be observed that the first 10 factors have eigenvalue greater than 1, while from factors 11-20 the eigenvalues are less than 1. So, 10 factors are retained for the representation of data. Table 2 presents all the factors extractable for the analysis along with their eigenvalues, extraction, and rotated sums of squared loadings. The 10 factors account for 64.895 per cent of the total variance, with Factor 1 accounting for 8.456 per cent and Factor 10 for 5.064 per cent. Only 35.105 per cent of the total variance is attributable to the other factors. Thus, these 10 factors can satisfactorily represent the data.

TABLE 1: DESCRIPTIVE STATISTICS

Hypothesis	Item	N	Minimum	Maximum	Mean	Std. deviation
ICT	I have received enough ICT about EBS	159	3.00	5.00	4.0377	0.57243
	I have received enough ICT about EBS	159	3.00	5.00	4.5849	0.63944
Perceived Usefulness (PU)	Using EB enables me to utilise services quickly	159	3.00	5.00	4.4906	0.72799
	Using EB improves my performance at utilising EBS	159	3.00	5.00	4.7547	0.51209
	Using EB for my banking services increases my productivity	159	3.00	5.00	4.7101	0.61533
	Using EB enhances my effectiveness at utilising EBS	159	3.00	5.00	4.8679	0.37506
	Using EB makes it easier for me to Utilise EBS	159	3.00	5.00	4.7849	0.57701
	Overall, EB is useful for me to utilise EBS	159	3.00	5.00	4.7786	0.53229
Perceived Ease of Use (PEOU)	Learning to use EB is easy for me	159	2.00	5.00	3.3082	0.98050
	I find it easy to do what I want	159	2.00	5.00	3.4151	0.90219
	My interaction with EB is clear and understandable	159	1.00	5.00	3.9308	1.44134
	I find EB to be flexible to interact with	159	1.00	5.00	4.6792	0.69647
	It is easy for me become skillful at using EB	159	1.00	5.00	3.7421	1.07453
	Overall EB is monetarly secure EB	159	1.00	5.00	3.9245	1.38503
Security and Privacy	Using EB is monetaryly secure	159	1.00	5.00	3.1698	1.66577
	I trust in the ability of EB to protect my privacy	159	1.00	5.00	3.0063	1.41196
	I trust in the technology EB is using	159	1.00	5.00	3.9686	1.43386
	I trust in EB as an actual bank	159	1.00	5.00	2.8679	1.27345
	I am worried about the security of EB	159	4.00	5.00	4.9371	0.24354
	Matters of security have great influence on me for using EB	159	3.00	5.00	4.9308	0.30020

TABLE 2: FACTOR EIGENVALUES, EXTRACTION SUMS, AND ROTATED SUMS OF SQUARED LOADING

Component	Initial Eigenvalues			Extraction Sums of Squared Loading			Rotation Sums of Squared Loading		
	Total	per cent of Variance	Cumulative per cent	Total	per cent of Variance	Cumulative per cent	Total	per cent of Variance	Cumulative per cent
1	1.691	8.456	8.456	1.691	8.456	8.456	1.565	7.827	7.827
2	1.529	7.6462	16.10	1.529	7.646	16.102	1.424	7.118	14.945
3	1.441	7.205	23.308	1.441	7.205	23.308	1.348	6.739	21.684
4	1.413	7.605	30.372	1.413	7.065	30.372	1.343	6.713	28.397
5	1.275	6.373	36.746	1.275	6.373	36.746	1.301	6.507	34.904
6	1.216	6.080	42.825	1.216	6.080	42.825	1.258	6.290	41.193
7	1.199	5.996	48.821	1.199	5.996	48.821	1.227	6.133	47.327
8	1.144	5.718	54.539	1.144	5.718	54.539	1.195	5.976	53.303
9	1.058	5.292	59.831	1.058	5.292	59.831	1.182	5.911	59.214
10	1.013	5.064	64.895	1.013	5.064	64.895	1.136	5.681	64.895
11	0.994	4.719	69.614	-	-	-	-	-	-
12	0.879	4.395	74.009	-	-	-	-	-	-
13	0.858	4.290	78.299	-	-	-	-	-	-
14	0.766	3.830	82.130	-	-	-	-	-	-
15	0.718	3.592	85.721	-	-	-	-	-	-
16	0.661	3.304	89.025	-	-	-	-	-	-
17	0.617	3.086	92.112	-	-	-	-	-	-
18	0.587	2.935	95.047	-	-	-	-	-	-
19	0.531	2.653	97.700	-	-	-	-	-	-
20	0.460	2.300	100.000	-	-	-	-	-	-

TABLE 3: ROTATED COMPONENT MATRIX

Item	1	2	3	4	5	6	7	8	9
I have received enough ICT about EBS	0.709	-	-	-	-	-	-	-	-
I have received enough ICT about EBS	-	-	-	-	-	-	0.861	-	-
Using EB enables me to utilise services quickly	-	-	-	-	-	-	-	-	-
Using EB improves my performance at utilising EBS	0.815	-	-	-	-	-	-	-	-
Using EB for my banking services increases my productivity	0.798	-	-	-	-	-	-	-	-
Using EB enhances my effectiveness at utilising EBS	0.845	-	-	-	-	-	-	-	-
Using EB makes it easier for me to Utilise EBS	0.787	-	0.732	-	-	-	-	-	-
Overall, EB is useful for me to utilise EBS	-	-	-	-	-	-	-	0.696	-
Learning to use EB is easy for me	-	-	-	0.610	-	-	-	-	-
II find it easy to do what I want to	-	-	-	-	-	0.802	-	-	-
My interaction with EB is clear and understandable	-	-	-	-	0.771	-	-	-	-
I find EB to be flexible to interact with	-	-	-	-	-	-	-	-	0.797
It is easy for me become skillful at using EB	-	-	-	-	-	-	-	-	0.587
Overall EB is monetaryly secure EB	-	0.635	-	-	-	-	-	-	-
Using EB is monetaryly secure	-	-	-	-	-	0.564	-	-	0.598
I trust in the ability of EB to protect my privacy	-	0.711	-	-	-	-	-	-	-
I trust in the technology EB is using	-	0.584	-	-	-	-	-	-	-
I trust in EB as an actual bank	0.768	-	-	-	-	-	-	-	-
I am worried about the security of EB	0.625	-	-	-	-	-	-	-	-
Matters of security have great influence on me for using EB	0.823	-	-	-	-	-	-	-	-

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation. Rotation converged in 19 iterations.

Table 3 designates the corresponding rotated constituent analysis. The idea of rotation is to decrease the issues on which the variables under investigation have high loadings. Rotation does not really change anything, but makes the clarification of the analysis easier. Also, from Table 3 it can be derived that factors 8 and 10 did not load any parameter on the specific variances, which leads to exclude them from the specific issue analysis presented in this paper. Factor 1 account for the main amount of the total variance (8.456 per cent). Table 3 shows that this issue contains of the eight variables with factor loadings ranging from 0.625 to 0.845. Four of the eight items describe apparent practicality, and they propose that the use of EB improves the presentation of bank transactions; three issues are security-related, signifying that a well-secured EBS is a crucial parameter to EB acceptance. Finally, the last issue regards the amount of ICT, showing that customers have already received enough ICT about EBS potentials and security level. Thus, according to this, the factor can be mentioned to as the "Amount of ICT about perceived usefulness and security level." Factor 2, which accounts for 7.646 per cent of the total variance, contains of three variables with factor loadings ranging from 0.584 to 0.711. One issue is related to perceived ease of use, while the other two are security related, showing the position of providing, on the one hand, a friendly user interface, and on the other hand, upholding concurrently at high levels the trust of the customer regarding privacy and EBS reliability. Thus, this issue can be named "Friendly user interface, providing privacy and reliability." Similarly, Factor 3 accounts for 7.205 per cent of the total variance. Table 3 shows that two substances are loaded on this factor: one regarding perceived practicality, and one about perceived ease of use. Therefore, this issue is referred to as "Easy use of EB and EBS utilisation."

On Factor 4, only one item is loaded about perceived ease of use, which accounts for 7.065 per cent of the total variance. Thus, this factor can be named "Clarity between EB and customer interaction."Factor 5 accounts for 6.373 per cent of the total variance. As presented in Table 3, this factor consists of two items with loadings ranging from 0.564 to 0.802.

One factor is related to perceived ease of use, while the other is security related. This factor is referred to as "Easiness to find and run securely a specific EBS monetary process." factor 6 accounts for 6.080per cent of the total variance.

TABLE 4: DEDUCED FACTORS INFLUENCING EB SATISFACTION

Factor	Factor Name	Variance
1	Provision of ICT about perceived usefulness and security level	8.456 per cent
2	Friendly used interface, providing privacy and reliability	7.646 per cent
3	Ease use of EB and EBS utilisation	7.205 per cent
4	Clarity between EB and customer interaction	7.065 per cent
5	Easiness to find and run securely a specific EBS monetary process	6.373 per cent
6	Amount of ICT about EBS benefits	6.080 per cent
7	EB usefulness on EBS utilisation	5.996 per cent
8	Flexibility and ease of use of a secure EBS	5.292 per cent

Table 4 presents the item which loads on this factor at 0.861. This item describes the amount of ICT regarding EBS benefits. Thus, this factor is referred to as the "Amount of ICT about EBS benefits." Similarly, Factor 7 contains only one item with factor loading of 0.696, which is related to perceived usefulness and named "EB usefulness on EBS utilisation." Finally, Factor 8, which accounts for 5.292 per cent of the total variance, includes three factors related to security and perceived ease of use. Therefore, this factor is referred to as "Flexibility and ease of use of a secure EBS." To summarise, the eight factors and their factor names that affect HDFC Bank's EB satisfaction are presented in Table 4, along with their share in variance. The main factors that seem to influence a customer towards or against using EBS are perceived ease of use and perceived usefulness, in combination with adequate security. In other words, customers seem to be willing to use a specific EBS if they have received adequate ICT about its benefits and potentialities, while the whole service is offered via a friendly, easy, and definitely secure interface.

CONCLUSION

This paper presented a study of HDFC Bank EBS customer satisfaction in India. An extension of the technology satisfaction model was used for the quantification of the parameters that influence the customer satisfaction, which included two standard variables and three new ones: amount of ICT, quality of Internet connection, and security/privacy.

Subsequently, I performed factor analysis with a sample of 159 customers. From this, eight different factors were deduced which are loaded with variables coming from the questionnaires and quantify the EBS customer satisfaction. By extrapolating the deduced factors, I conclude that: if customers trust in the security of an EBS and believe that using an EBS will increase their productivity and effectiveness, then the probability of using the particular system is higher. Thus, bank institutions, in order to promote EBS use, must take actions in order to reassure possible customers about the high standards of the security and the potential that EBS use offers. The EBS training sessions could be organised on the bank premises for customer to strengthen their confidence in using an EB system. Based on the perceived usefulness-related results, it is obvious that banks should provide through the EBS an efficient graphical user interface that will provide easy access and navigation among the various offered services.

Finally, according to my results, the amount of ICT that a consumer receives about an EBS plays a major role into adapting its use or not. Thus, by providing informative leaflets and advertisements relative to the alternative services and benefits of using an EBS, new users can be motivated towards EBS adoption.

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TESTING THE CAPITAL ASSET PRICING MODEL (CAPM) – A STUDY OF INDIAN STOCK MARKET

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ABSTRACT

Investor tires to know the risk and return of the select security or asset on which they are planning to invest. They will be ready to invest even on risky assets when it appears to pay premium return for accepting the risk. Therefore, investors demand a higher expected return for investments in riskier securities. However, it's still unclear how investors assess the riskiness of the cash flow on a security or on a project and how they determine what risk premium to demand. Investors' uses Capital Asset Pricing Model to study the risk and return of the securities and market. It provides how a risky security is priced in competitive capital market. It postulates a positive and linear relationship between risk and return. This paper is aimed at examining the validity of the Capital Asset pricing Model in the Indian Stock Market. The study examines historical monthly average stock prices of 80 companies and historical monthly average values of market index of BSE 100 for the period June 2000 to May 2007, and the data collected from NSE and BSE websites. Data analysed in three steps: one, calculation of beta, alpha and expected return, two, calculation of relationship between risk and return of the selected Securities by using Spearmen's correlation coefficient, and third, testing hypothesis using Z-test. From the study we can say that there is significant relationship between risk and return, investors have realised higher return by opting for higher risky securities, and the validity of CAPM coefficients signifies the implication of the CAPM in the Indian stock market in determining the required rate of return of risky securities.

KEY WORDS
CAPM, Investor, Return, Risk, Stock market.

INTRODUCATION

Today's environment provides investors with a good number of investment opportunities. They are financial assets and non-financial assets. Before investing in any of the assets or securities, investors' tries to know the risk attached with the asset and return that can be expected from it. They try to know the risk and return of the select asset or security on which they are planning to invest. They will be ready to invest on risky assets when it appears to pay premium for accepting the risk. Therefore, investors demand a higher expected return for investments in riskier securities. However, it's still unclear how investors assess the riskiness of the cash flow on a security or on a project and how they determine what risk premium to demand!

In an emerging equity markets around the globe, the large and in some cases-extraordinary return performance shown by these markets and the necessity for investors to base their portfolio selection on a scientific bases and attempting to evaluate the exposure to risk over many different assets, Sharpe [1964][1], Lintner [1965][2] and Mossin [1966][3] have developed the Capital Asset Pricing Model.

The CAPM model is based on the idea that the highly expected stocks' returns will always be accompanied with high levels of risks.

The CAPM model predicts that the component of the expected return exceeding the risk-free rate will be linearly related to the characteristic risk which is in this case measured by the asset's beta. The fact that this model which has been existent in the modern economics research and the modern portfolio theory for the past five decades, academics and practitioner have been always questioning the ability of this model to explain the actual movements of assets' returns.

Since the introduction of CAPM in the 1960's, the model has been one of the most controversial topics in the field of financial economics. In fact, managers use CAPM as one of the techniques in evaluating and undertaking a project. The application of the CAPM model was and has been always prompted by the need of investors to be able to calculate the return they are seeking on the proposed projects.

The CAPM model helps in measuring the riskiness of the cash flows on these projects, the estimation of the cost of the capital and projecting the expected rate of return. This model was primarily developed to provide a reasonable explanation behind the differences in the risk premiums across different assets.

THE CAPM

The CAPM describes the relationship between risk and expected return and is used in the pricing of risky securities. This relationship was first proposed independently by John Lintner, William F. Sharpe and Mossin, J, which can be represented by the following linear equation:

$E[R_i] = R_f + \beta_i (E[R_m] - R_f)$

Where: Rf = Risk free rate of return

Bi = Beta of the security i

$E[Rm]$ = Expected return on market

$(Rm - Rf)$ = Market premium

According to the CAPM, the expected return of a security or a portfolio equals the rate of return on a risk-free rate plus a risk premium (Ross, Westerfield and Jaffe 2005)[4]. CAPM is a simple tool available for investors to evaluate their investments. If this expected return does not meet or beat the required return, then the investment should not be undertaken.

The CAPM is valid within a special set of assumptions. They are (Bodie, Kane, and Marcu, 2005)[5]:

- All the investors are risk averse; they will maximize the expected utility at the end of period wealth.
- That is referred to as homogenous expectations (beliefs) about asset returns. All the investors use the same information at the same time on expected return and covariance matrix of stock return to form the optimal risky portfolio.
- A fixed risk-free rate exists, and allows the investors to borrow or lend unlimited amounts to the same interest rate.
- There are a definite number of stocks and their quantities are fixed within the one period world.
- All stocks are perfectly divisible and priced in a perfectly competitive market.
- There are no market imperfections (there are no taxes, regulations, or trading costs).

These assumptions are all hard to fulfill in reality, but as a financial theory, it may still describe reality in a reasonably way.

LITERATURE REVIEW

The researcher has reviewed three categories of literature. One, literature supporting the theory; two, literature challenged or criticised the theory; and three, academic continuous debate.

SUPPORT OF CAPM VALIDITY

As stated in the introduction, the CAPM model was developed in the early 1960s by, Sharpe [1964][6], Lintner [1965][7] and Mossin [1966][8].

'The Capital Asset Pricing Model: Some Empirical Tests. Studies in the Theory of Capital Markets' is one of the earliest experimental studies that found supportive evidence for CAPM is that of Black, Jensen and Scholes (1972)[9]. They used monthly portfolio return rather than individual stocks and tested whether the cross-section of expected returns is linearly related to the portfolio betas. They have combined securities into portfolios to diversify firm-specific returns to enhance the accuracy of the beta estimates and the expected portfolio return. This approach alleviates the statistical problems that arise from measurement errors while estimating beta. Authors found that there is relation between the average return and beta is very close to linear and that portfolios with high/low betas have high/low average returns. Therefore, the data are dependable with the prediction of the CAPM.
Another classic empirical study, that wires the CAPM is the Fama and MacBeth (1973)[10]. They examined whether there is a positive linear relation between average return and beta. Furthermore, they studied whether the squared value of beta, the volatility of asset returns can explain the residual variation in average return across assets that are not explained by beta alone.

CHALLENGES OR CRITICS ON CAPM VALIDITY

In the early 1980s, several research studies that were deeply examined whether there was a serious discussion from the linear CAPM risk-return trade-off due to other variable that affect this trade-off. A good number of empirical studies found that there is same contribution to the CAPM, such as the Banz (1981)[11] tested the CAPM model by studying whether the size of firms can explain the residual variation in average return across assets that remain unexplained by the CAPM's beta. Banz challenged the model by demonstrating the firm size does explain the cross sectional-variations in average return on a particular collection of assets better than beta. It states that over the long-periods of time, small firms (with low market value of equity) tend to generate larger return than large company stocks. This finding has become to be known as the 'size effect'.
There were several studies, that found risk return trade-off influenced by various factors, in particular, the earnings yield (Basu 1977)[12]; leverage and the ratio of firm's book value to equity to its market value (Stattman 1980)[13]; Rosenberg, raid and Lanstein (1985)[14]; and Cham, Hamao, Lakonishok (1991)[15] have all been utilised by testing the validity of CAPM.
The general reaction to Banz's (1981)[16] findings, that the CAPM may be missing some aspects of reality, was to support the view that although the data may suggest deviation from CAPM these deviations are not so important as to reject the theory.
However, this idea has been challenged by Fama and French (1992)[17], used the same method as reached to vary different conclusion. Fama and MacBeth found a positive relation between return and risk while Fama and French found the CAPM could not fully prove the relation between each other. Balck[18] argued that data are too noisy to invalidate the CAPM.
Ning and Liu[19] used time series testing and cross-sectional regression testing in the Shanghai Stock Exchange during 01.01.1996 to 31.12.2002; they establish that there is no linear relationship between the expected rate of return and beta. However, the non-systematic risk has significant effect on the return. Xue and Zhou[20] have applied the same methods to test CAPM from 01.06.1995 to 02.06.2001, and found that the CAPM did not hold true in the first three periods (the first period from 09.06.1995 to 05.06.1998); second period (from 07.06.1996 to 04.06.1999); and the third period (from 06.06.1997 to 02.06.2000) but holds true in the fourth period (from 05.06.1998 to 02.06.2001). They argued that this is because; the investors are becoming more and more rational.
Xi Yang and Donghui Xu, (2006)[21], tested CAPM model by taking 100 companies' stock in Shanghai Stock Exchange from 01.01.2000 to 31.12.2005, they say that the CAPM predicts that the stocks with higher/lower risk will yield high/low expected rate of return is not supported. However, beta return relationship is linear with each other and the non-systematic risk has no effect on the return during the test period, which is consistent with CAPM. Hence, when take 2000 to 2005 as whole period CAPM is not fully invalid.

ACADEMIC DEBATE - CONTINUES

If we recollect from the above, Fama and French were criticised for their own research findings, which were published in 1992. Kothari, Shaken, and Sloan (1995)[22] argue that Fama and French (1992)[23] findings depend basically on how the statistical findings are interpreted.
Amihud, Christensen and Mendelson (1992)[24], and Black (1993)[25] support the view that data are too noisy to nullify the CAPM. In reality, they suggested a more efficient way of improving methodology used by Fama and French, which depends particularly upon using an efficient statistical method, saying that the estimated relation between average return and beta is positive and significant.
Jagannathan and Wang (1993)[26] argue that the failure of the empirical findings to support the CAPM was mainly due to the basic assumptions, which were made to facilitate the empirical studies. One of those assumptions is the consideration of the return on the market indices as a very close proxy for the return on the market portfolio containing all the assets which exist in the national economy. One could argue that these market indices can not capture the whole assets in the economy.

STATEMENT OF THE PROBLEM

In the present scenario investors are hesitant to invest in risky assets. There has always been a fear of burning hands of oneself in this volatile stock market. The Capital Asset Pricing Model (CAPM) explains that risky assets give high returns. From above literature review we can also say that there are variations in the findings and applicability of CAPM to the select stock market for the select period. To understand the significant relationship between risk and return of securities, and examine the implication of Capital Asset Pricing Model in the Indian stock market in determining the required rate of return of risky securities.

PURPOSE OF THE STUDY

The purpose of this paper is to test whether the CAPM holds true in (BSE100) Indian stock market. Nevertheless, the following are the other objectives:

- Whether a higher/lower risk will yield higher/lower expected rate of return
- Whether the expected rate of return is linearly related with the stock's beta, i.e. its systematic risk.
- Whether the non-systematic risk affects the stocks' returns. (CAPM predicts that only the systematic risk has the explanation power on the rate of return).

SCOPE OF THE STUDY

The present study attempts to test the whether CAPM holds true in (BSE100) Indian stock market and covers a period of eight year from June 2000 to May 2007. Therefore, the study may not fully apply to other markets.

HYPOTHESIS

H_0: The slope beta is not significantly different from zero.
H_1: The slope beta is significantly different from zero.

RESEARCH PHILOSOPHY AND APPROACH

RESEARCH PHILOSOPHY

There are two kinds of research philosophy: positivism, and phenomenology.
The Positivists believe that reality is stable and can be observed and described from an objective viewpoint (Levin, 1988)[27], i.e. without interfering with the phenomena being. Put it simple, positivism is the subject that can not affect the researcher and the researcher is independent. The research assumes the role of an objective analyzer; the methods used are highly structured and end in quantifiable that can be statically.

The phenomenologist argues for the reality situation of the research subject; they prefer working in an observable social reality.[28] The present study is positivism.

RESEARCH APPROACH

There are two broad methods of research: ***deductive*** and ***induction***.

The induction approach is building theory through the research process. Particularly, it concerns affairs that have happened. Hereby, it is better to study a small sample of subjects, get a feel of what is going on and comprehend the problem.[29]

The deduction approach is going to test or develop the theory. There are three major characteristics of deduction approaches. First, the researchers will explain causal relationships of variables data. Second, the researches are independent. Third, it usually uses quantitative data.[30] The present study is deductive approach, because the general aim of the present study is to verify the CAPM model, whether it is relevant to Indian stock market or not during the period June 2000 to May 2007.

The study type is analytical, quantitative and historical. Analytical because facts and existing information is used for the analysis, Quantitative as relationship is examined by expressing variables in measurable terms and also Historical as the historical information is used for analysis and interpretation.

SAMPLE DESIGN

The population of the study consists of stocks listed at the BSE100. The list includes 100 companies, but due to the non-availability of data for 20 companies, the researcher has covered the remaining 80 companies as final sample size. - ABB Ltd, ITC Ltd, Associated Cement (ACC) Companies, J & K Bank, Arvind Mills, Kochi Refinery, Ashok Leyland, Kotak Mahindra Bank, Asian Paints, L & T, Bajaj Auto, M& M, Bank of Baroda, Matrix Lab, Bank of India, Moser Baer, Bharat Electronics, MRPL, Bharat Forge, Mahanagar Telephone Nigam Ltd. (MTNL), Bharati Shipping, National Alum, Bharat Heavy Electricals Ltd.(BHEL), Neyveli Lignite, Bharat Petroleum Corporation Ltd (BPCL), Nicolas Pirmal, Biocon, Nestle India, Cadila Health Care, Oil and Natural Gas Corporation (ONGC), Chennai Petroleum, Patni Computers, Cipla Ltd, Pfizer Ltd, Colgate Palmolive, Punjab National Bank, Container Corporation, Polaris Software, Corporation Bank, Ranbaxy Lab, Cummins Inc., Raymond Ltd, Dr. Reddy Lab, Reliance Energy, GAIL India, Reliance Capital, GE Shipping Co., Steel Authority of India Ltd. (SAIL), Grasim Industries, Satyam Computers, HCL Infosystem, State Bank of India, HCL Technology, Shipping Corporation of India (SCI), HDFC Bank, Siemens Ltd, HDFC, Sun Pharmaceutical, Hero Honda Motors, Tata Motors, Hindustan Unilever Ltd (HUL), Tata Chemical, Hindustan Petroleum, Tata Power, ICICI Bank, TVS Motors, Industrial Development Bank of India (IDBI), Tata Tea Ltd, Indian Hotels, Tata Steel, Indian Overseas, Bank, Vijaya Bank, Infosys Technology, Vides Sanchaar Nigam Ltd (VSNL), Indian Oil Corporation, Wipro, Indian Petrochemical, Wockhardt, Indian Rayon, and UTI Bank. These stocks represent different categories of different sectors (Oil & Gas; Capital goods; Housing related; Transport equipments; Chemical & Petrochemical; Finance; Telecom; Healthcare; Information Technology; Metal, Metal Products & Mining; FMCG; Tourism; Power; Agriculture and Media & Publishing) in the India Stock market.

SOURCES OF DATA

Historical monthly average stock prices of sample companies and historical monthly average values of market index of BSE 100 are collected from NSE and BSE websites. The secondary data for the study collected for eight years starting from June 2000 to May 2007.

METHODOLOGY

Data analysed in three steps:

Step one, calculation of beta (β), alpha (α) and expected return [E (R)],

*Step two, calculation of r*elationship between risk and return of the selected Securities by using Spearmen's correlation coefficient (ρ), and

Third step, statistical testing, in order to test the hypothesis Z test was used.

Therefore, in the present study, researcher analysed the data by using beta (β), alpha (α) and expected return [E (R)], Spearmen's correlation coefficient (ρ), and *Z*-test

Analysis part starts with the calculation of individual stock returns by taking opening and closing prices of stocks and return on market index by taking opening and closing prices of market index of BSE 100 by using stock return, return on market index, beta and expected returns of the select securities.

Beta (β) = $Cov (Ra, Rp) / \sigma_m^2$

Where: R_a = Measures the rate of return of the asset,

R_p = Measures the rate of return of the portfolio

$Cov (R_a, R_p)$ = Covariance between the rates of return.

σ_m^2 = Covariance of the return on market portfolio

Alpha (α) = $A – Rf – \beta (Rmf – Rf)$

Where: A = Actual return on the asset,

R_f = Risk free return

Rmf = Index return

Stock Return: $Rit = Log_e (P_t / P_{t-1})*100$

Where: Rit = Return on stock i in time period t

Log_e = Natural logarithm

P_t = Closing price

P_{t-1} = Opening price.

Return on Market Index (BSE 100): $X_t = Log_e (I_t / I_{t-1})*100$

Where: X_t = Return on index

I_t = Closing number

I_{t-1} = Opening number

Beta (Slope): $\beta_i = (n \sum XR - \sum X \sum R) / (n \sum X^2 – (\sum X)^2)$

Alpha (Intercept) $\alpha_i = R_{mean} – \beta_i X_{mean}$

Where: α_i = Constant intercept of security i

R_{mean} = Mean return of security i

X_{mean} = Mean market return of index

β_i = Slope of security i.

Expected Return on Security: $E (R) = \alpha_i + \beta_i X_t$

RISK AND EXPECTED RETURN OF INDIVIDUAL SECURITIES

TABLE - 1 BETA AND EXPECTED RETURN OF SELECT SECURITIES

S. No	Name of the Company	β (Beta)	α (Alpha)	E (R)
1.	ABB Ltd	0.05411	0.003991	2.319098
2.	Associated Cement Companies	0.032034	-0.14572	3.244477
3.	Arvind Mills	0.021857	-0.59434	1.718811
4.	Ashok Leyland	0.037938	-0.52127	3.493751
5.	Asian Paints	0.007512	-0.01442	0.780628
6.	Bajaj Auto	0.059101	0.129237	6.383966
7.	Bank of Baroda	0.031639	-0.35784	2.990502
8.	Bank of India	0.032678	-0.32928	3.129035
9.	Bharat Electronics	0.02753	-0.26769	2.034415
10.	Bharat Forge	0.017839	-0.24238	1.645579
11.	Bharati Shipping	0.019858	-0.46605	0.87965
12.	Bharat Heavy Electricals Ltd.	0.062869	-0.19885	1.371799
13.	Bharat Petroleum Corporation Ltd	0.025336	-0.20137	2.479958
14.	Biocon	0.021345	-0.21534	2.1235
15.	Cadila Health Care	0.009399	-0.27932	0.715372
16.	Chennai Petroleum	0.060611	0.902431	6.495869
17.	Cipla Ltd	0.016942	-0.21219	1.580836
18.	Colgate Palmolive	0.019378	-0.15621	1.89464
19.	Container Corporation	0.0133542	2.166293	3.59942
20.	Corporation Bank	0.023386	-0.3369	2.138087
21.	Cummins Inc.	0.012341	-0.2189	1.78922
22.	Dr.Reddy's lab	0.024511	0.211101	0.252211
23.	GAIL India	0.026943	0.207514	0.24146
24.	GE Shipping Co.,	0.01902	-0.26645	1.519716
25.	Grasim Industries	0.038789	-0.00208	4.103003
26.	HCL Infosystem	0.043999	-0.377532	4.27894
27.	HCL Technologies	0.034541	-0.28058	3.37493
28.	HDFC Bank	0.014642	-0.08837	1.461251
29.	HDFC	0.032351	0.026822	3.450547
30.	Hero Honda Motors	0.0117	-0.12468	1.113517
31.	Hindustan Unilever Ltd	0.038142	-0.1435	3.14356
32.	Hindustan Petroleum	0.028868	-0.27082	2.78435
33.	ICICI Bank	0.023923	-0.18674	2.345021
34.	Industrial Development Bank of India	0.032139	-0.62121	0.07589
35.	Indian Hotels	0.045859	-0.14099	4.71227
36.	Indian Overseas Bank	0.024567	-0.07812	2.134521
37.	Infosys Technologies	0.022606	-0.15116	2.2441239
38.	Indian Oil Corporation	0.021336	-0.22517	2.032802
39.	Indian Petrochemical	0.04382	0.799443	5.437018
40.	Indian Rayon	0.041213	-0.17823	3.1234
41.	ITC Ltd	0.02941	-0.14172	2.970781
42.	J&K Bank	0.014346	-0.22563	1.292635
43.	Kochi Refinery	0.016593	0.566468	2.057481
44.	Kotak Mahindra Bank	0.021875	-0.24561	2.10021
45.	Larsen & Toubro Limited	0.01232	-0.21346	1.23467
46.	Mahindra & Mahindra	0.0361	-0.29592	3.524566
47.	Matrix Lab	0.056936	-0.63483	5.055961
48.	Moser Baer	0.013631	-0.37401	1.068562
49.	Mangalore Refinery &Petrochemicals Ltd	0.025341	-0.2912	1.7123
50.	Mahanagar Telephone Nigam Ltd.	0.033159	-0..46968	3.039521
51.	National Alum	0.05432	-0.26541	1.234
52.	Neyveli Lignite	0.009367	-0.57153	-1.43597
53.	Nicolas Pirmal	0.012883	-0.311	1.052425
54.	Nestle India	0.05217	0.1234	2.14526
55.	Oil and Natural Gas Corporation	0.013947	-0.14801	0.372489
56.	Patni Computers	0.017245	-0.23456	0.542371
57.	Pfizer Ltd	0.012957	-0.44029	0.043243
58.	Punjab National Bank	0.098156	-0.167221	2.00012
59.	Polaris Software	0.070777	-0.62385	2.07372
60.	Ranbaxy Lab	0.005442	-0.0891	0.070751
61.	Raymond Ltd	0.018983	-0.2061	0.502346
62.	Reliance Energy	0.004366	-0.15735	-0.0291
63.	Reliance Capital	0.04526	-0.75165	0.403542
64.	Steel Authority of India Ltd	0.058008	-0.04534	6.09376
65.	Satyam Computers	0.038212	-0.1903	3.853768
66.	State Bank of India	0.037	-0.11467	1.436323
67.	Shipping Corporation of India	0.037113	-0.48973	3.437957
68.	Siemens Ltd	0.025788	-0.10072	2.628417
69.	Sun Pharmaceutical	0.008899	-0.0424	0.899376
70.	Tata Motors	0.02134	-0.2345	1.9872
71.	Tata Chemical	0.024501	-0.35925	2.233697
72.	Tata Power	0.041141	-0.27718	4.076874
73.	TVS Motors	0.02345	-0.32456	3.123345
74.	Tata Tea Ltd	0.041019	-0.32015	4.020951
75.	Tata Steel	0.031452	-0.18987	3.12334
76.	Vijaya Bank	0.041518	-0.58788	4.176664
77.	Videsh Sanchaar Nigam Ltd.	0.039456	-0.40394	3.771771
78.	Wipro	0.040677	-0.238	4.066915
79.	Wockhardt	0.027994	-0.40058	2.562104
80.	UTI Bank	0.261775	-0.24672	2.908952

RELATIONSHIP BETWEEN RISK AND RETURN OF THE SELECTED SECURITIES

Spearmen's correlation coefficient has been calculated to determine the significant relationship between risk and return of the selected securities.

Spearman's correlation coefficient is $\rho = 1- [(6\sum D^2 / (n^3-n)]$

The computed value of correlation coefficient is given in Table-2

TABLE – 2 SPEARMAN'S CORRELATION COEFFICIENT

Sl. No.	Name of the Company	B	E	D = B ~ E	D^2
1.	ABB Ltd	0.045259	2.319098	-2.27384	5.170346
2.	Associated Cement Companies	0.004366	3.244477	-3.24011	10.49831
3.	Arvind Mills	0.005442	1.718811	-1.71337	2.935633
4.	Ashok Leyland	0.0077512	3.493751	-3.48624	12.15386
5.	Asian Paints	0.008899	0.780628	-0.77173	0.595566
6.	Bajaj Auto	0.009367	6.383966	-6.3746	40.63551
7.	Bank of Baroda	0.009399	2.990502	-2.9811	8.886973
8.	Bank of India	0.0117	3.129035	-3.11734	9.717778
9.	Bharat Electronics	0.01232	2.034415	-2.02209	4.088866
10.	Bharat Forge	0.012341	1.645579	-1.63324	2.667465
11.	Bharati Shipping	0.012883	0.87965	-0.86677	0.751286
12.	Bharat Heavy Electricals Ltd.	0.012957	1.371799	-1.35884	1.846452
13.	Bharat Petroleum Corporation Ltd	0.013542	2.479958	-2.46642	6.083209
14.	Biocon	0.013631	2.1235	-2.10987	4.451548
15.	Cadila Health Care	0.013947	0.715372	-0.70142	0.491997
16.	Chennai Petroleum	0.014346	6.495869	-6.48152	42.01014
17.	Cipla Ltd	0.014642	1.580836	-1.56619	2.452962
18.	Colgate Palmolive	0.01593	1.89464	-1.87805	3.527061
19.	Container Corporation	0.016942	3.59942	-3.58248	12.82415
20.	Corporation Bank	0.017245	2.138087	-2.12084	4.49797
21.	Cummins Inc.	0.017839	1.78922	-1.77138	3.13779
22.	Dr.Reddy's lab	0.018983	0.252211	-.23323	0.054395
23.	GAIL India	0.01902	0.24146	-.22244	0.049479
24.	GE Shipping Co.,	0.019378	1.519716	-1.50034	2.251013
25.	Grasim Industries	0.019858	4.103003	-4.08314	16.67207
26.	HCL Infosystem	0.021336	4.27894	-4.2576	18.12719
27.	HCL Technologies	0.02134	3.37493	-3.35359	11.24657
28.	HDFC Bank	0.021345	1.461251	-1.43991	2.073328
29.	HDFC	0.021753	3.450547	-3.42879	11.75663
30.	Hero Honda Motors	0.021857	1.113517	-1.09166	1.191721
31.	Hindustan Unilever Ltd	0.021875	3.14356	-3.12168	9.744915
32.	Hindustan Petroleum	0.022606	2.78435	-2.76174	7.62723
33.	ICICI Bank	0.023386	2.345021	-2.32163	5.389986
34.	Industrial Development Bank of India	0.02345	0.07589	-0.05244	0.00275
35.	Indian Hotels	0.023923	4.71227	-4.68835	21.9806
36.	Indian Overseas Bank	0.0244501	2.134521	-2.11002	4.452185
37.	Infosys Technologies	0.024511	2.24239	-2.21673	4.913884
38.	Indian Oil Corporation	0.024567	2.032802	-2.00823	4.0333007
39.	Indian Petrochemical	0.025336	5.437018	-5.41168	29.2863
40.	Indian Rayon	0.025341	3.1234	-3.09806	9.59797
41.	ITC Ltd	0.025788	2.970781	-2.94499	8.672986
42.	J&K Bank	0.026943	1.292635	-1.26569	1.601974
43.	Kochi Refinery	0.027994	2.057481	-2.02949	4.118816
44.	Kotak Mahindra Bank	0.028868	2.10021	-2.07134	4.290456
45.	Larsen & Toubro Limited	0.02941	1.2346	-1.20526	1.45651
46.	Mahindra & Mahindra	0.031452	3.524566	-3.49311	12.20184
47.	Matrix Lab	0.031639	5.055961	-5.02432	25.24382
48.	Moser Baer	0.032034	1.068562	-1.03653	1.074391
49.	Mangalore Refinery and Petrochemicals Ltd	0.032139	1.7123	-.168016	2.822941
50.	Mahanagar Telephone Nigam Ltd.	0.032351	3.039521	-3.00717	9.043075
51.	National Alum	0.032678	1.234	-1.20132	1.443175
52.	Neyveli Lignite	0.033159	-1.43597	1.469124	2.158324
53.	Nicolas Pirmal	0.034541	1.052425	-1.01788	1.036089
54.	Nestle India	0.0361	2.14526	-2.10916	4.448557
55.	Oil and Natural Gas Corporation	0.037	0.372489	-0.33549	0.112553
56.	Patni Computers	0.037113	0.542371	-0.50526	0.255286
57.	Pfizer Ltd	0.037938	0.043243	-0.00531	281E-05
58.	Punjab National Bank	0.038142	2.00012	-1.96198	3.849358
59.	Polaris Software	0.038212	2.070372	-2.03216	4.129671
60.	Ranbaxy Lab	0.038789	0.070751	-0.03196	0.001022
61.	Raymond Ltd	0.039456	0.502346	-0.46289	0.214267
62.	Reliance Energy	0.040677	-0.0291	0.069776	0.004869
63.	Reliance Capital	0.041019	0.403542	-0.36252	0.131423
64.	Steel Authority of India Ltd	0.041141	6.09376	-6.05262	36.63419
65.	Satyam Computers	0.041213	3.853768	-3.81256	14.53558
66.	State Bank of India	0.041518	1.46323	-1.39481	1.945482
67.	Shipping Corporation of India	0.04382	3.437957	-3.39414	11.52016
68.	Siemens Ltd	0.043999	2.628417	-2.58442	6.679219
69.	Sun Pharmaceutical	0.045859	0.899373	-0.85352	0.728491
70.	Tata Motors	0.05217	1.9872	-1.93503	3.744341
71.	Tata Chemical	0.05411	2.233697	-2.17959	4.750599
72.	Tata Power	0.05432	4.076874	-4.02255	16.18094
73.	TVS Motors	0.056936	3.123345	-3.06641	9.402865
74.	Tata Tea Ltd	0.058008	4.020951	-3.96294	15.70491
75.	Tata Steel	0.059101	3.12334	-3.06424	9.389561
76.	Vijaya Bank	0.060611	4.176664	-4.11605	16.94189
77.	Videsh Sanchaar Nigam Ltd.	0.062869	3.771771	-3.7089	13.75596
78.	Wipro	0.070777	4.066915	-3.99614	15.96912
79.	Wockhardt	0.098156	2.562104	-2.46395	6.07104
80.	UTI Bank	0.216775	2.908952	-2.64718	7.007545

$\sum D^2 = 619.1556$
ρ = 0.992
From the Table- 2 the calculated value of correlation coefficient between the stock beta and expected return (0.992) shows high degree of relationship between risk and stock return. We can also observe that risky assets are giving high returns. This shows the relevance of CAPM to Indian stock market.

HYPOTHESIS TESTING

H_0: The slope beta is not significantly different from zero.
H_1: The slope beta is significantly different from zero.
To test above hypothesis z-test has been used between calculated values of beta and expected returns of securities.
The Z-test is a statistical test used in inference which determines if the difference between a sample mean and the population mean is large enough to be statistically significant. In order for the Z-test to be reliable, certain conditions must be met. The most important is that since the Z-test uses the population mean and population standard deviation, these must be known.
The formula for calculating the z- score for the Z-test is as follows
$| Z | = (\beta - E) / SE$
Where: SE = Standard Error
The Z- test is depicted in Table- 3

TABLE - 3 Z – TEST FOR BETA AND EXPECTED RETURN

	Beta (β)	Expected Return : E (R)
Mean	0.033067	2.350803
Known Variance	0.001025	2.402
Observations	80	80
Hypothesized Mean Difference	0	0
z	13.737	
P (Z<=z) One-tail	0	
Z Critical one-tail	1.644854	
P (Z<=z) Two-tail	0	
Z Critical Two-tail	1.959964	

From the Table - 3 the calculated Z value (13.373) is greater than the critical value of Z. Therefore, according to Z-test the null hypothesis is rejected and alternative hypothesis is accepted. Hence, the slope beta is significantly different from zero

FINDINGS

From the foregoing analysis and interpretation the following findings have been extracted:
- There is significant relationship between risk and return.
- Investors have realised higher return by opting and investing for higher risky securities.
- The statistical validity of CAPM coefficients signifies the implication of the CAPM in the Indian stock market in determining the required rate of return of risky securities.

CONCLUSION

The present research reveals that there is high degree of relationship between risk and expected return. This shows the high degree of relevance of CAPM in calculation of required rate of return in Indian stock market. Therefore, investors can integrate the performance of their portfolio to the market developments, investors can opt for risky securities to get high returns, and investors can establish trade-off between their risks and return preferences by applying the CAPM.

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PANCHAYATS AND EMPOWERING THE RURAL POOR SPECIALLY THE WOMEN: THE WEST BENGAL EXPERIENCE

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ABSTRACT

The study on 'Gram Panchayat' requires exploring the knowledge about empowerment of rural poor and weaker section of the community, particularly the women, as gram panchayat itself symbolizes power at the grass root level. The term empowerment refers to a psycho-social and econo-political process by which it is possible to improve the strategic position and quality of life of the poor, marginalized and powerless people through horizontal integration so as to throw a new light on the existing structure of power relationship or on the existing form of the hegemony. In this study empowerment is defined as the participation in decision making process and institutions. If one does not participate in the process of decision making, he/she is unable to enjoy power. In our study, we would like to see whether West Bengal's Panchayati Raj has the capability to improve the political and social power among the less privileged sections of the society, particularly the women. For the purpose of this study we have undertaken a field survey at 8 No. Saraboth Gram Panchayat of Garbeta Block-II in the district of Paschim Midnapore in West Bengal. From this study it is found that panchayat representation from the poor and weaker section of the community has been increased to a large extent but so far as organizational representation is concerned, it has been found a disappointing picture where most of the decision makers in different levels of political organization are from rich peasant or from businessmen. The absence of the poor, marginalized and weaker sections in the party level does not signify any radical restructuring of the rural power structure. It is also found that there is no revolutionary transformation in regard to women liberation.

KEYWORDS

Panchayat, Rural India, West Bengal.

INTRODUCTION

Improving the political control which the powerless have over their own lives is important both as an end in itself, and as a mean by which economic empowerment can be achieved" **John Friedmann (1992)**

Any study on gram panchayat needs an exploration of the concept of empowerment as gram panchayat itself symbolizes power at the grass root levels. Empowerment has become a slogan because so many organizations have taken up the cause of empowering the rural people, of which gram panchayat is an important agency. The concept of empowerment comes from the basic concept of power. According to Talcott Parsons, "Power resides with members of the society as a whole, and power can increase in the society as a whole, as the society pursues collective goals like economic development"[8]. According to the Oxford English Dictionary, power is, "possession of control or command over others; domination; rule; government; sway; command; control; influence; authority"[9]. The very dictionary meaning of power is indicative of two divergent, positive and negative senses in which it can be used.

olding of power in society is not something fixed but variable; increase in the power of one group would by definition, lead to a decrease in the power of other groups in a relational situation. For instance, if land would be redistributed from the rich landlord to the landless poor, the latter group would be gaining power at the expense of the former class. Power, so conceived, involves relationships between those who have more of it and those who have less. What gram panchayat in West Bengal has been doing for decades is to decentralize power from the upper hierarchy of the society to the lower or weaker section. Therefore, empowerment means to throw a challenge to the existing structure of power relationship or to challenge the existing form of the hegemony.

EMPOWERMENT: ITS MEANING AND DEFINITIONS

The term 'empowerment' has different connotations in different social and political aspects. It does not translate easily into all languages. "Local terms associated with empowerment include self-strength, self-control, self-power, self-reliance, own choice, life of dignity in accordance with other's on value, capable of fighting for one's rights, independence, self-decision making, being free, awakening and capability"[10]. It has both intrinsic and instrumental values. It is relevant at the individual as well as collective levels. Hence there are many possible definitions of empowerment. In a broad sense, "empowerment refers to the expansion of freedom of choice and action to shape one's life. It is a process by which the poor and powerless people exercise greater control over resources and decisions of their lives. It is a means to improve the position of poor, marginalized and powerless people by providing them materials, intellectual and socio-political rights in the society and state"[11].

Empowerment is essentially, an emancipatory concept. It is a new term used in the theories of social development. In every theory of social development the poor gives emphasis on the ongoing struggles for power and the disadvantaged groups in their search for bring about improvement in their quality of life. Empowerment is a process to change the distribution of social power in favour of the underprivileged both in the arena of interpersonal relations and in societal institutions. This concept of empowerment grows out of a fundamental criticism of the existing social, economic and political order.

Empowerment as a concept had come to lime light in development literature during the late 1970s, and it continues to be used in relation to the development exercise at the grass root levels. The presumption is that small grass root communities are weak to survive on their own unless they are integrated into bigger and more powerful entities. This is necessary for them to gain access to the economic and other resources supportive of their development. It is assumed that through various developmental programmes powerless can be powerful.

In this connection, Michel Foucault's path-breaking analysis of power needs to be cited here for better understanding of the concept. According to Foucault, in common parlance, power has been viewed in reductionist term. It is the top-down vision that has always looked at the power as a striking force–a visible and

[8] Quoted by Mohit Bhattacharyya (1997): In Perspective in Political Science, Burdwan University.
[9] Oxford English Dictionary.
[10] Puthenkalam John Joseph (2004); Empowerment : Sustainable Human Development Strategy for Poverty Alleviation, Rawat Publication, New Delhi, P-328.
[11] Narayan , Deepa (2005) ed. Empowerment and Poverty Reduction, Rawal Publication, New Delhi.

effective form. Those who hold power at the top are in favourable station to take advantage of a number of apparatuses and devices – particular techniques, knowledge, and modalities of intervention and discourse–that facilitate production of political power. In other words, they have the means of power to which they have access because of the strategic positions they occupy. Power, in his view, is not what and where people think in reality, it is the expression of hundreds of micro-process defining various currents coming from a multitude of different sources.[12]

Therefore, in a nutshell, empowerment refers to a psycho-social and econo-political process by which it is possible to improve the strategic position and quality of life of the poor, marginalized and powerless people through horizontal integration so as to throw a new light on the existing structure of power relationship or on the existing form of the hegemony.

In our study we define empowerment as participation in decision-making processes and institutions. If one does not participate in the process of decision-making he/she is unable to enjoy power. 'An empowering approach to participation treats poor people as co-producers, with authority and control over decisions and resources devolved to the lowest appropriate level. Inclusion of poor people and other traditionally excluded groups in priority setting and decision-making is critical to ensure that limited public resources built on local knowledge that lead to change. Participation can take different forms. At the local level, depending on the issue, participation may be direct; representational, by selecting representatives from membership-based groups and association; political, through elected representatives'.[13]

CONSTITUTIONAL PROVISIONS

To facilitate, more participation by the people at the grass root levels, especially SC, ST and women section, in 1992, was enacted the 73rd Constitutional Amendment which became operative from 24th April, 1993. This Legislation provides for reservation for Scheduled Castes (SCs) and Scheduled Tribes (STs) at all levels in proportion to their total population of the area. One third of the seats are to be reserved for women. Reservation will be on rotation basis in respect of backward classes and enabling provision has been made in the Act. Post of chairman in Panchayati Raj Institutions (PRIs) at all levels is to be reserved for SCs and STs in proportion to their percentage in the total population of the area. Similarly, not less than one-third of the offices of chairmen are to be reserved for women on rotation basis. Another unique feature of the Act is the concept of Gram Sabha, which has been introduced first time in that Act. It will be a body consisting of all persons registered as voters in the panchayat area at the village level and may exercise powers entrusted to it by the State Legislature. Therefore, we find that 73rd Amendment Act is made to extend the area of participation at the different levels of PRIs by the backward as well as the weaker section of the rural society. This amendment was made to empower the powerless through participation in decision-making bodies. The concept of Gram Sabha introduced in that Act may act as a panacea to the powerlessness of the poor people at the grass root levels. After thirteen years of passing the 73rd Amendment we are now in a position to evaluate empowerment in reality in rural society.

PURPOSE OF THE STUDY

The main objectives of the study are:

1. to know the process of empowerment of the rural poor, marginalized and weaker section of the community;
2. to evaluate the extent of decentralization of decision making power of the poor specially the women through panchayats; and
3. to assess the role of panchayats run by dominant political party and its allies with their agenda regarding the women liberation in radical regime of West Bengal.

METHODOLOGY

Relevant data have been collected from both primary and secondary sources of information. Primary data are collected directly from the field of enquiry by means of structured interview method. Panchayat office records, organizational records at different levels and administrative report of the government of West Bengal have mainly been used as secondary sources of information. Different journals, periodicals, conference proceedings and statistical reports have also been used to supplement the data. Our study area covers the geographical boundary of 8 No. Saraboth Gram Panchayat of Garbeta Block-II in the district of Paschim Midnapore in West Bengal.

EMPOWERMENT OF THE POOR: THE WEST BENGAL EXPERIENCE

In the context of contemporary West Bengal, both government-led redistribution of land and subsequent sustained growth of agricultural output could potentially contribute much to the economic empowerment of the rural poor. The activities of political parties and their representatives in the local areas, and conflicts over these activities are clearly an important part of micro-politics. This is essentially true in West Bengal where, theoretically, the devolution of power in the panchayats gives many people easy access to government and opportunity to take part directly in the formal political system.

By way of assumption we may say that by participating in the decision making bodies at the institutional level like PRIs does not prove that the rural mass becomes really powerful. Until and unless they participate in the decision making processes at the organizational level i.e. at the party levels they cannot be powerful in real sense. Thus, panchayat representation is a necessary condition for empowerment of the rural poor. It is not a sufficient condition for the empowerment. The sufficient condition for empowerment is that the rural poor must be included and their role should be recognized in the political party to which they belong. Unless and until they can exercise effective control over the panchayat system and the party system simultaneously, real power cannot be said to be handed down to the poor people. We have undertaken field studies to evaluate how far the rural people find their places in decision-making organs, such as at the level of party where real decisions are taken.

In West Bengal's Panchayat system, where the communist party holds the majority, decisions are made primarily in internal party meetings. Hence, it is desirable that the poor should involve themselves in different party organizations like Local Committee, Gram Committee, Guide Committee etc, where decisions regarding allocation of development funds between different villages and different people are settled. As soon as the village gets the development funds, the Gram Committee (constituted at the village level with active party supporters) immediately calls a meeting to distribute these funds in different development projects and also among different poor and needy households belonging to the target groups. The decision taken at the Gram Committee meeting is finally assessed and approved by the panchayat. Actually, the ultimate outcome of the decision about the distribution of development fund is percolated from party organization to the Panchayati Raj system.

Panchayat is an institution, which no doubt helps to improve political empowerment of the rural poor. According to party documents, the CPI(M)–the single largest party of the Left Front in West Bengal, has the following three important objectives for its rural development policy which is supposed to be implemented through the panchayat:

i) to involve the entire people in the process of development by democratic decentralization of the power structure;

ii) to bring about a change in the correlation of class forces in favour of the poor and working people; and

iii) to raise class-consciousness through struggles over development."[14]

The Panchayati Raj Programme is central to achieving these development aims by instituting a system of democratic local self-government. It is expected that the programme could ensure mass participation in the panchayats and could be able to increase the class-consciousness amongst the rural masses.

[12] Foucault, M. (1980); Power/Knowledge, Harvester Press.

[13] Puthenkalam John Joseph (2004); Empowerment: Sustainable Human Development Strategy for Poverty Alleviation, Rawal Publication, P-338.

[14] Mishra S.K. (1991); An Alternative Approach to Development: Land Reforms and Panchayats; Department of Information and Cultural Affairs, Government of West Bengal P-9.

In West Bengal's Panchayat experience, it is well known to all that panchayat members are not representative of their entire community as much as they are the party's. The poorest of the poor families will be benefited only when their representation in different party organization is satisfactory and sufficiently large in numbers.

The implementation of a democratic local administration is not in itself enough to ensure this empowerment if the discourse of micro-politics and the value system upon which it is based, is left unaltered. In this section we would like to see whether West Bengal's Panchayati Raj has the capability to improve the political and social power among the less-privileged sections of the society particularly the women. For this purpose we have undertaken a field study at 8 no. Saraboth Gram Panchayat of Garbeta Block-II in the district of Paschim Midnapore in West Bengal.

FIELD STUDY REPORT FROM 8 NO. SARABOTH GRAM PANCHAYAT

We have made a fieldwork at 8 No. Saraboth Gram Panchayat of Garbeta Block-II in the district of Paschim Midnapore in West Bengal and the results are shown in Table-1.1. From-1.1 it is seen that in 1978 Panchayat election total number of seats was 11 out of which 7 seats were owned by Left Front Party and 4 seat by others. The corresponding figures for the panchayat election 1993, 1998 and 2003 were 6 and 5, 5 and 5 and 6 and 5 respectively. The Left Front party includes Communist Party of India (Marxist) [CPI(M)], Communist Party of India (CPI), Revolutionary Socialist Party (RSP) and Forward Bloc. Others include Congress, Bharatiya Janata Party (BJP) and Trinamul Congress (TMC). In our study area Forward Bloc and RSP had no contesting candidates and thus no representation. Here it should be mentioned the most realistic situation that Left Front politics in West Bengal is too much strong and CPI (M) is the most powerful political party in the state particularly at the village level.

TABLE-1.1: GRAM PANCHAYAT REPRESENTATION IN 8 NO. SARABOTH GRAM PANCHAYAT

Year of Election	Total Elected Members	Caste composition (Left Front)							Caste composition (Others)							Class composition (Left Front)			
		General		SCs		STs		Total (L.F)	General		SCs		STs		Total	Rich Peasants	Middle Peasants	Poor and Marginal Peasants	Landless agricultural labourers
		M	F	M	F	M	F		M	F	M	F	M	F					
1978	11 [SC = 0 ST = 2(18.18%) F = 0]	5 (72%)	0	0	0	2 (28%)	0	7 [SC=0 ST=2 F=0]	4	0	0	0	0	0	4	4 (57%)	3 (43%)	0	0
1993	11 [SC = 2 (18.18%) ST = 2 (18.18%) F = 2 (18.18%)]	3 (50%)	1 (16.7%)	1 (16.7%)	0	1 (16.6%)	0	6 [SC=1 ST=1 F=1]	3	0	0	1	1	0	5	0	4 (66%)	2 (34%)	0
1998	10 [SC = 4 (40%) ST = 3 (30%) F = 4 (40%)]	0	2 (40%)	2 (40%)	0	0	1 (20%)	5 [SC=2 ST=1 F = 3]	1	0	2	0	1	1	5	0	3 (60%)	1 (20%)	1 (20%)
2003	11 [SC = 3 (27.27%) ST = 3 (27.27%) F = 3 (27.27%)]	2 (33.3%)	1 (16.7%)	1 (16.7%)	1 (16.7%)	0	1 (16.6%)	6 [SC=2 ST=1 F=3]	2	0	1	0	2	0	5	0	3 (50%)	1 (17%)	2 (33%)

Source: Own survey, 8 No. Saraboth G.P. Office, 2007

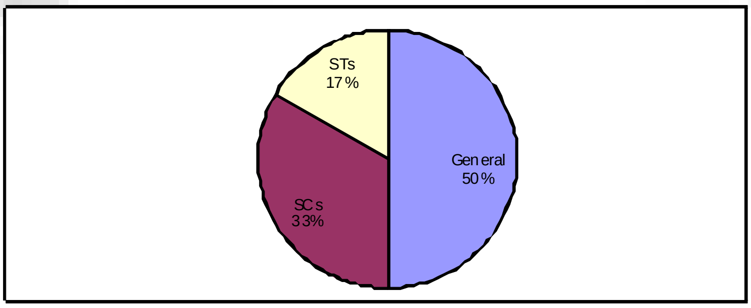
Here LF means Left front, SCs means Scheduled Castes and STs means Scheduled Tribes, F = Female and M = Male.

* Category	Land Holdings (in acres)
Rich peasants	>7.5
Middle peasants	5.0 – 7.5
Poor peasants	3.0 – 5.0
Marginal peasants	<3.0

*Source: Mukherjee Nirmal and Bandopadhyay, D (1993); New Horizons for West Bengal's Panchayat, Government of West Bengal

Table-1.1 also shows that the earlier panchayat of 1978 was dominated by the general upper caste, rich and middle peasants. Lower caste representation that is representation from ST categories to the panchayat was only 18.18% in totality, no representation of SC categories was found here. In the last three Panchayat elections in the years 1993, 1998 and 2003 after 73rd Amendment of the Indian Constitutions, it is found that General Caste representation were 66%, 40% and 50% as compared to 72% in 1978 in case of Left Front. In totality these percentage were 64%, 30% and 46% respectively. The current panchayat is dominated by the middle, poor and marginal peasants (50%) and landless agricultural labourers (33%) in case of Left Front. It is also found that female representation in 1993 was 18.18%, in 1998 it was 36.36% and it is 27.27% in 2003 (the last panchayat election). This indicates that the representation of women is recognized at the institutional level as prescribed by 73rd Amendment. The caste composition of the ruling combine in 2003 panchayat election can also be clarified in Figure-1A.

FIGURE-1A: CASTE COMPOSITION OF RULING COMBINE IN 2003 PANCHAYAT ELECTION



Pie diagram is drawn on the basis of data represented in Table-1.1.

From the comparison on the basis of panchayat representation in different successive elections one important point is clear that ***there has been a shift of power from upper general caste to lower caste and also from rich and middle peasants to middle peasant and poor/landless agricultural labourers. It is also clear that the role of the women is recognized at the institutional level for empowering the women section. With the passage of time, there is a radical change in the distribution of power in the panchayat institution and thus, this can be seen as a good symptom of the political empowerment of the rural poor particularly the women section of the society.***

Gram panchayat is an institution which has a guide committee[15] to decide on different aspects of its functioning. We have studied the composition of the Guide Committee (which is shown in Table-1.2) where panchayat level decisions are taken.

TABLE-1.2: GUIDE COMMITTEE REPRESENTATION IN 8 NO. SARABOTH GRAM PANCHAYAT, 2003

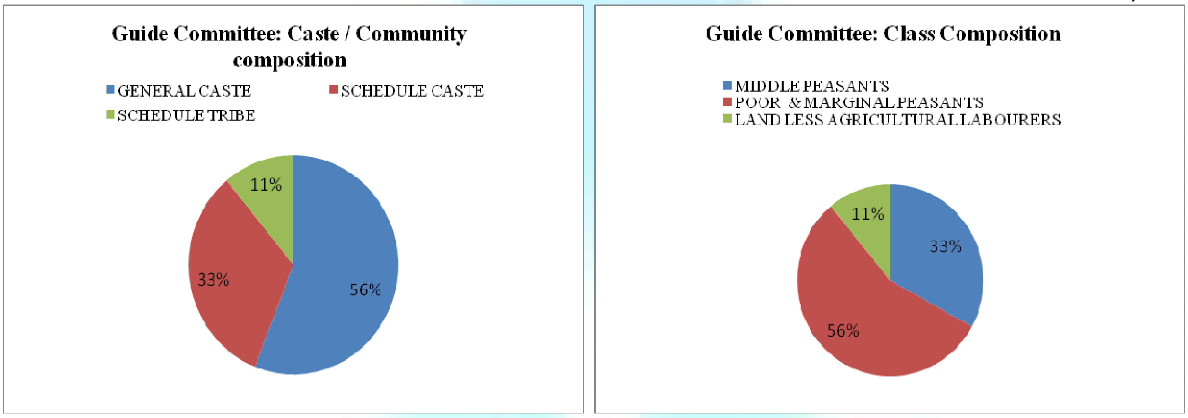
Caste/community	Total	Male	Female	Class composition		
				Middle peasants	Poor and Marginal peasants	Landless Agricultural labourers
General castes	5 (56%)	5 (100%)	–	3	2	–
Scheduled Castes	3 (33%)	2 (67%)	1 (33%)	–	2	1
Scheduled Tribes	1 (11%)	1 (100%)	–	–	1	–
Total	9 (100%)	8 (89%)	1 (11%)	3 (33%)	5 (56%)	1 (11%)

Source: CPI (M) Local Committee, own survey – 2007

In Table-1.2 we have 9 guide committee members in 8 No. Saraboth Gram Panchayat. Here we find that general caste representation is 56%. All members are male in this caste, which indicates that there is no female representation and in this case there is 100% male representation. The scheduled caste representation to the panchayat guide committee is 33% out of which 67% from male and 33% from female. In case of scheduled tribes, guide committee representation is only 11%, all of which from male, none from female.

Thus, it is observed that 8 No. Saraboth Gram Panchayat Guide Committee is dominated by the General Castes. ***It is also observed that the male domination is significant in all the cases. It does not therefore signify empowerment of the female at the grass root levels.*** The caste and class composition of the guide committee representation in 8 No. Saraboth Gram Panchyat in 2003 is also clarified in the following pie diagram (Figure-1B).

FIGURE-1B: CASTE AND CLASS COMPOSITION OF GUIDE COMMITTEE REPRESENTATION IN 8 NO. SARABOTH GRAM PANCHAYAT, 2003



Each of the Pie diagram is drawn on the basis of data represented in Table-1.2

If we analyse the class composition of the said guide committee we find that 33% of total members are middle peasants; 55% of total members are from poor and marginal farmers; and only 11% members are landless agricultural labourers. Thus, it is clear that the landless agricultural labourers have a very low level representation to the 8 No. Saraboth Gram Panchayat. But the majority of the total members of the guide committee are from the poor and marginal farmers. It may be a significant step to empower the rural poor.

It should be noted from our table that one of the decision making arena of the CPI(M)'s organization (i.e. Guide committee) is significantly poorly represented by the landless agricultural people. ***It is a clear indication of their powerlessness at their grass root levels. Moreover, female representation is considerably low and the representation from the socially untouchables i.e. Scheduled Castes (SCs), Scheduled Tribes (STs), etc. is also very poor. If this situation prevails at the decision making level how can we expect the rural people specially women to be empowered at its desired levels***?

The relationship between caste, class and politics should also be analysed to get an overall idea about how power is distributed in different political organizations from poor and landless families. Politics may always be seen as power located in various structural arrangements of the society. The following table certainly shows that there has been a radical change in the distribution of power in favour of the poor and socially as well as economically backward families.

Let us now see the position of the poor and the lower caste in terms of organizational representation or party representation. In 8 No. Saraboth Gram Panchayat areas there are 8005 Krishak Sabha members in CPI (M)'s peasant wing. Their caste and class composition is exhibited in Table-1.3 and also clarified the same in Figure -1C.

TABLE-1.3: CASTE AND CLASS COMPOSITION OF KRISHAK SABHA MEMBERS IN 8 NO. SARABOTH GRAM PANCHAYAT AREA, 2003

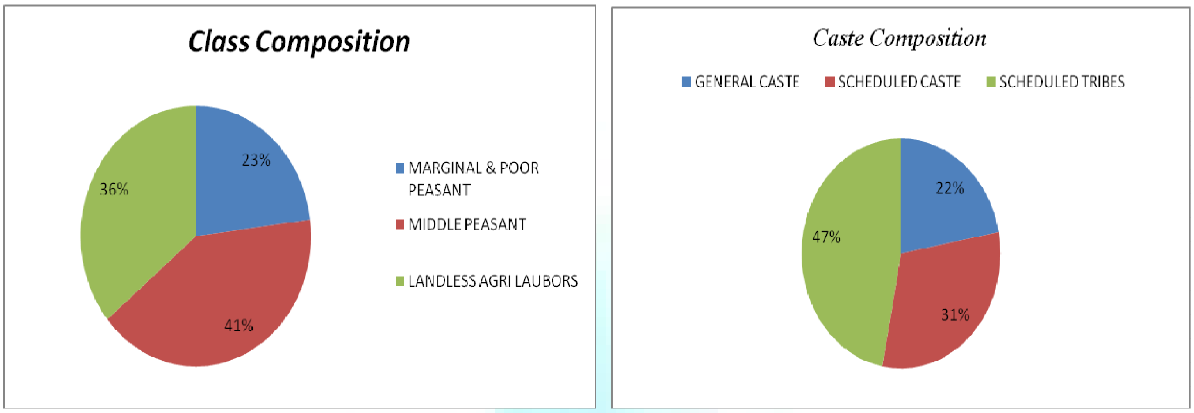
Members (in numbers)	Caste-wise break up			Class-wise break up		
8005	General Castes	Scheduled Castes	Scheduled Tribes	Marginal & poor peasants	Middle peasants	Landless agri. labourers and share croppers
	1765 (22%)	2472 (31%)	3768 (47%)	1841 (23%)	3282 (41%)	2882 (36%)

Source: Own survey in 8 No. Saraboth Gram Panchayat area, 2007

[15] Panchayat guide committee is the decision-making unit for implementing different projects and for selecting the beneficiaries. Guide Committee deals with the allocation of resources among different villages on the basis of their needs and also on the basis of their population sizes and geographical areas.

In ruling party's peasant wing, Krishak Sabha, it is seen that only 36% members are from landless agricultural labourers and share croppers. Here lower caste representation is 78% (=31% + 47%), which is significantly high. Kishan Sabha members have practically no decision making power and due to that high percentage of Krishak Sabha member does not indicate their empowerment at all.

FIGURE -1C: CASTE AND CLASS COMPOSITION OF KRISHAK SABHA MEMBERS IN 8 NO. SARABOTH GRAM PANCHAYAT AREA 2003



Each of the Pie diagram is drawn on the basis of data represented in Table-1.3

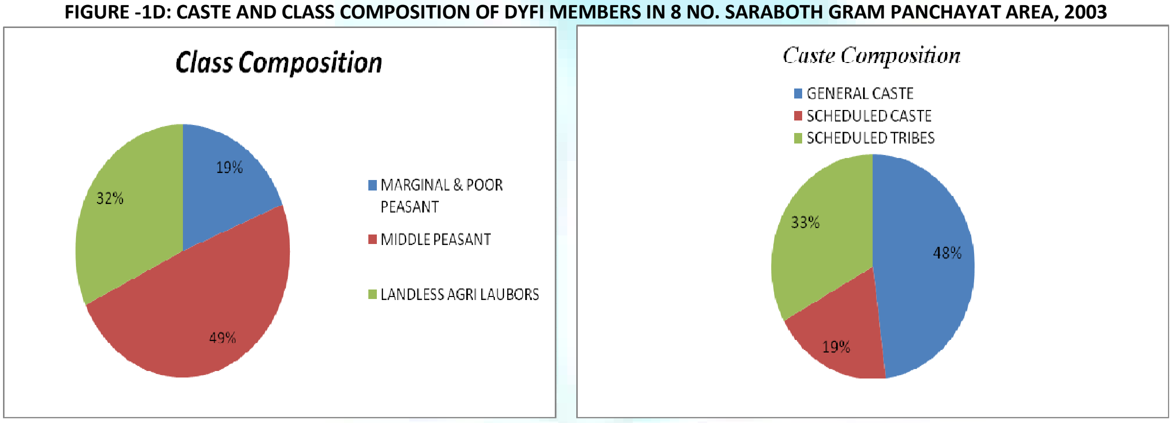
TABLE-1.4: CASTE AND CLASS COMPOSITION OF DYFI MEMBERS IN 8 NO. SARABOTH GRAM PANCHAYAT AREA, 2003

Members (in numbers)	Caste composition			Class composition		
	General Caste	Scheduled Caste	Scheduled Tribes	Poor and marginal peasants	Middle peasants	Landless agricultural labours
1900 (48%)	904 (48%)	367 (19%)	629 (33%)	361 (19%)	931 (49%)	608 (32%)

Source: Own survey in 8 No. Sarabogh Gram Panchayat area, 2007

From Table-1.4 it is evident that in the youth wing of the Party, the dominant partner in the Left Front general caste representation is 48% whereas lower caste representation is 52%. Most of the survey villages are dominated by scheduled castes and Scheduled Tribes people and the Assembly Constituency as well as Lok Sabha Constituency is a reserved one. Hence lower caste representation should be much more than 52% and therefore, lower caste representation is relatively low as compared to upper caste representation. This class and caste composition of DYFI if also clarified in Figure-1D below:

FIGURE -1D: CASTE AND CLASS COMPOSITION OF DYFI MEMBERS IN 8 NO. SARABOTH GRAM PANCHAYAT AREA, 2003



Each of the Pie diagram is drawn on the basis of data represented in Table-1.4

In terms of their landholdings 19% members are from poor and marginal peasant families, 49% members from middle families and 32% members are landless agricultural labourers. Here it is seen a conspicuous absence of youth from the class of landless agricultural labourers who constitute the single largest group in the village.

Let us consider the caste and class composition of Mahila Samity Members (Table-1.5)

TABLE-1.5: CASTE AND CLASS COMPOSITION OF MAHILA SAMITY MEMBERS IN 8 NO. SARABOTH GRAM PANCHAYAT AREA

Member (in numbers)	Caste-wise break up			Class-wise break up		
	General Caste	Scheduled Caste	Scheduled Tribes	Rich peasants	Middle peasants	Poor and marginal peasants & agri labour (landless)
1600	746 (47%)	329 (20%)	525 (33%)	352 (22%)	688 (43%)	560 (35%)

Source: Own survey in 8 No. Sarabogh Gram Panchayat area, 2007

From Table-1.5 the Mahila Samity, the women wing of CPI(M) Party, is represented by 53% from the lower castes (SCs and STs) and 47% from the upper castes. Lower castes representation should be higher than 52% because scheduled Caste (SC) and Scheduled Tribe (ST) people dominate most of the villages in this gram panchayat area.

In terms of their land holdings, 22% members are from rich peasant families, 43% from middle peasant families and 35% from poor, marginal and landless agricultural labourers. Thus, ***it is found that upper caste (rich) has the lowest representation (22%). It reveals the obvious fact that the rich (classes) people have the general tendency not to allow their wives and other female members to become members of Mahila Samity. It may be due to psychological or other barriers though it is subject to be probed***. Middle to lower class people have the higher representation (88%) in the CPI (M)'s Mahila Samity. This composition is exhibited in Figure-1E as under:

FIGURE -1E: CASTE AND CLASS COMPOSITION OF MAHILA SAMITY MEMBERS IN 8 NO. SARABOTH GRAM PANCHAYAT AREA

Each of the Pie diagram is drawn on the basis of data represented in Table-1.5

Let us now consider the composition Gram Committee in 8 No. Saraboth Gram Panchayat area, which is shown in Table-1.6.

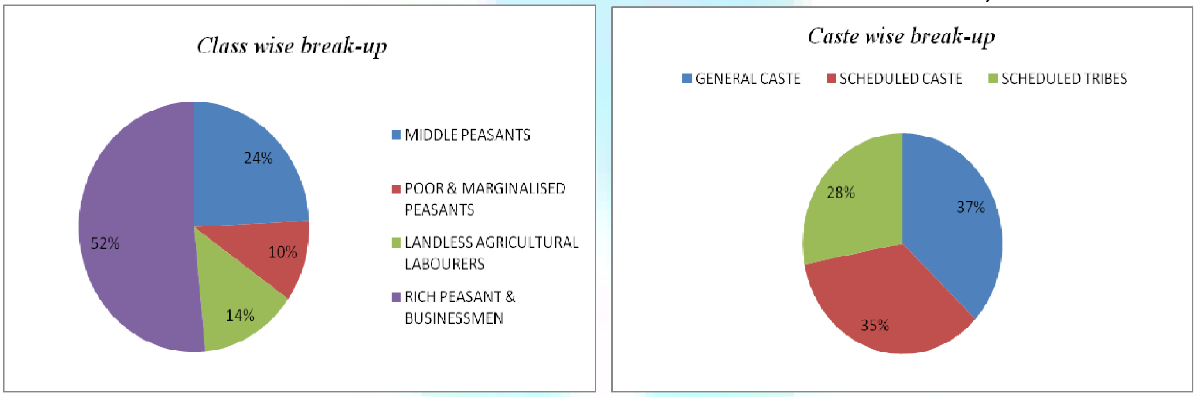
TABLE-1.6: GRAM COMMITTEE COMPOSITION IN 8 NO. SARABOTH GRAM PANCHAYAT AREA, 2003

Members (in numbers)	Caste-wise break up			Class composition			
	General Caste	Scheduled Caste	Scheduled Tribes	Rich peasant & businessmen	Middle peasant	Poor and marginal peasants	Landless agricultural labours.
253	95 (37%)	89 (35%)	69 (28%)	124 (49%)	58 (23%)	25 (10%)	46 (13%)

Source: Own survey in 8 No. Saraboth Gram Panchayat area, 2007

Table–1.6 shows the class and caste composition of the CPI (M) Gram Committee at the village level. In CPI (M)'s Gram Committee rich peasants and businessmen are dominant (49%), the representation of middle peasants, poor and marginal peasants, and landless agricultural labourers is 23%, 10% and 13% respectively. As compared to the population size general caste representation to the gram committee should not be as high as 37%. This picture is also shown in the following Figure-1F:

FIGURE -1F: GRAM COMMITTEE COMPOSITION IN 8 NO. SARABOTH GRAM PANCHAYAT AREA, 2003



Each of the Pie diagram is drawn on the basis of data represented in Table-1.6

Same pattern is also found in the composition of Local Committee (L.C) under which 8 No. Saraboth Gram Panchayat belongs to. In CPI (M)'s party hierarchy Local Committee is one of the most important layers in mobilizing supporters at the rural level. For the study a survey on the composition of said local committee have been made shown in Table-1.7 below

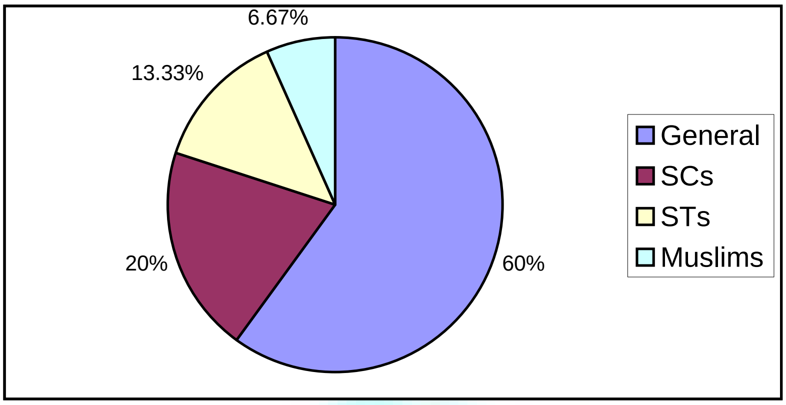
TABLE–1.7: COMPOSITION OF CPI(M)'S LOCAL COMMITTEE (LC) UNDER WHICH 8 NO. SARABOTH GRAM PANCHAYAT BELONGS.

Caste/Community	Total	Male	Female	Composition for 8 No. Sarboth G.P. under L.C.		
				Total	Male	Female
General Castes	9 (60%)	8 (88.89%)	1 (11.11%)	2 (66.67%)	1 (50%)	1 (50%)
Scheduled Castes	3 (20%)	3 (100%)	--	--	--	--
Scheduled Tribes	2 (13.33%)	2 (100%)	--	1 (33.33%)	1 (100%)	--
Muslims	1 (6.67%)	1 (100%)	--	--	--	--
Total	15 (100%)	14 (93.33%)	1 (6.67%)	3 (100%)	2 (66.67%)	1 (33.33%)

Source: Local Committee of CPI(M), own survey – 2007.

As it has mentioned earlier while analyzing the composition of the Gram Panchayat that an increasing trend of the Scheduled Castes (SCs), Scheduled Tribes (STs) and women section participating in the functioning of gram panchayat as elected members, Table-1.7 does not reflect this trend. From Table-1.7 it is found that out of the total 15 members of the Local Committee under survey 9 members that is 60% of the total members still belongs to the General Caste category. Only 3 members, that is 20%, are coming from SCs and 2 members that is 13.33%, are coming from STs to join gram panchayat as members. The caste composition of local CPI (M)'s committee under which 8 No. Saraboth G.P. belongs to can also be shown in the following pie diagram (Figure-1G).

FIGURE-1G: CASTE COMPOSITION OF CPI (M)'S LOCAL COMMITTEE, 2003



Pie diagram is drawn on the basis of data represented in Table-1.7

It is remarkable also that in the decades of different feminist movement in India as well as abroad only one female member is found in the Local Committee which does not suggest any breakthrough in equalizing gender in the organizational structure of power at the rural level. If we consider that CPI (M)'s Local Committee has been giving leadership over the functioning of the Gram Panchayat it is expected that female members join in this arena of power.

From the discussion so far it is clear that after the passing of 73rd Amendment Act, in 1992 one would expect a larger representation of the SCs, STs and women folk at the level of Gram Panchayat. It has happened at the level of gram panchayat as an arena of institutional power. Actually, every political party has to keep provision for the backward sections of the population legally and constitutionally but at the level of the organizational power i.e. at the level of local committee we find a different picture. Therefore, ***our study does not suggest any fundamental change in the process of decentralization of power. If legal power is offered to the backward section of the population and then deprives them of the decision-making power at the level of leadership, no fundamental change has taken place. In tune with the slogan of peoples' democracy through dispersion of power to the people residing at the grass root levels, one would expect that organizational power is also decentralized to the backward sections***.

Therefore, it may be argued that while panchayat representation from the poor families as well as from lower caste categories has increased to a large extent over time, but so far as organizational representation is concerned, we find a disappointing picture where most of the decision-makers in different political organizations are from rich peasant or from businessmen. Although SCs and STs people mostly dominate the gram panchayat, general caste representation is relatively high as compared to its population size. The numerical strength of the lower castes and lower classes has been established at the level of panchayat and other organizations but at the leadership level, concentration of power is found in the hands of middle peasantry. It thus creates constraints in the unity of agricultural labourers and poor peasants and the basic principle of people's democracy is violated. At the level of the elected body one would expect a communist party to have a higher percentage of agricultural labourers and poor peasants [Lieten, 1992]. ***Our findings show an absence of this group in the party level, which does not signify any radical restructuring of the rural power structure and thus agrarian mobilization loses its momentum***.

In spite of the criticisms we have made above against lop sided nature of political empowerment it is only through participating in PRIs and party organizations, in West Bengal that women group in a large number are now participating in those two arenas of political power particularly after passing out of 73rd Constitutional Amendment in 1992. Now we may have a quick glance on other types of women empowerment in certain fields, which are mostly invisible. Other indicators of empowerment, which are now drawing international attention and have partly become a regular part of impact analysis include access and rights to resources and economic opportunities and knowledge (land, jobs, education, health care, etc.), access to service institutions, involvement in household decision-making and representation in public decision-making bodies at the community, state and national levels (which are already dealt with). The case of exclusion of women group from different socio-economic power centres can also be taken into consideration in analysis of women empowerment. The cultural exclusion of women may sometimes take the form of not allowing them to participate in society in the way others are allowed to. "In South Asian countries mainly women, poor and so called low-caste people are excluded from the participation in many socio-economic and political decision-making processes by saying that they are ignorant, uneducated and unwilling to participate"[16]. We have made a field work at 8 No. Saraboth Gram Panchayat to revisit the notion of women's empowerment.

We have conducted a survey on villages–Olui and Derepur under 8 No. Saraboth Gram Panchayat and the data relating to population status is shown in Table-1.8 below:

TABLE-1.8: POPULATION STATUS OF TWO VILLAGES UNDER 8 NO. SARABOTH G.P. AREAS, 2007

Village	Total Population (in number)			Sex Ratio	No. of Couples
	Male	Female	Total		
Olui	330 (50.69%)	321 (49.31%)	651 (100%)	973	176
Derepur	442 (53.51%)	384 (46.49%)	826 (100%)	869	134
Total	772	705	1477	913	310

Source: Own Survey 2007

According to own survey made a later part of 2007, it is found that at present the village Olui has a total population 651 out of which 330 are male (50.69%) and 321 are female (49.31%). This village has 176 couples and the sex ratio in this village stands as 973. Whereas in Derepur, a total of 826 people are residing out of which 442 are male (53.51%) and 384 are female (46.49%). Sex ratio in the village is 869.The number of couples in this village is 134.

In the following Table the economic status of women in comparison with its male counterpart have been briefly analysed. For this purpose, three variables like agricultural labour, land ownership by women and their access to bank/cooperative credit society has been used. The results are shown in Table-1.9.

[16] Acharya Meena and Ghimiri Puspa in Economic and Political Weekly Oct 29, 2005, p-4719

TABLE-1.9: ECONOMIC STATUS OF POOR AND WEAKER SECTION SPECIALLY WOMEN IN TWO VILLAGES UNDER 8 NO. SARABOTH GRAM PANCHAYAT

Village	Agricultural Labourers			Ratio of Female worker to total population	Females engaged in non-agricultural workers (other than household works)		Female having title land ownership		Females having access to bank/cooperative credit	
	Male	Female	Total		Nos.	Ratio to TP	Nos.	Ratio to TP	Nos.	Ratio to TP
Olui [Total population (TP)] = 651	120 (69.4%)	53 (30.6%)	173 (100%)	8.14%	2	0.31%	30	4.61%	0	0%
Derepur [Total population (TP)] = 826	39 (52%)	36 (48%)	75 (100%)	4.36%	6	0.73%	8	0.97%	11	1.34
Total	159 (64.1%)	89 (35.9%)	248 (100%)	6.03%	8	0.54%	38	2.57%	11	0.75%

Source: Own Survey 2007

From Table-1.9, it is found that out of 173 agricultural labourers in the village Olui 120 are male (69.4%) and 53 are female (30.6%). In respect of total population in the village Olui only 8.14% are female workers who are engaged in farming works. Only 30 female (4.6% of total population) are having little of land ownership. There is no female in this village who has access to bank/cooperative credit society. In Derepur on the other hand, it is found that out of total 75 agricultural labourer 36 belong to women (48%). Out of total population it reaches only 4.36%. Out of 36 female workers only 6 are engaged in non-agricultural works (other than their household works). In contrast to village Olui Derepur has 8 female members who have ownership of land and 11 female have access to bank or cooperative credit society. From these data we may say that the share of the farming works by the female in both villages is noteworthy. However, these women take responsibility of running their family business also. In the daytime they are engaged in cultivating land and in morning and night they have to cook meals, look after their children and also to provide care to the older parents of their husbands. Therefore, it is an obvious example of gender discrimination. With regard to ownership of landholdings we found a dismal picture is too. In Olui, only 4.6% women and in Derepur only 0.97% are having title of land ownership. At the village level ownership of land symbolizes empowerment. But we do not see any breakthrough in land distribution favouring women. ***In West Bengal's land reforms policy there is no special provision to distribute 'Khas' (i.e. vested) land in favour of women group, which does not show also that women are liberated by a radical regime in West Bengal***. It has no agenda for emancipation of women who are being exploited by an age-old practice of patriarchalism. Although a significant figure comes out of the village Derepur where 11 women have access to bank/cooperative credit system for which a new movement of micro-finance for women is started in many South Asian countries of which Bangladesh is a fit case. For women empowerment this radical regime has to redefine its slogan of land reforms movement from 'land to the tiller' to 'land to the women' because only men always till land.

TABLE-1.10: SOCIAL STATUS OF FEMALES IN TWO VILLAGES UNDER 8 NO. SARABOTH GRAM PANCHAYAT

Village	No. of females who could marry on their own choice in last 10 years	No. of females who faces domestic violence on regular basis	No. of females suicidal death or murder due to dowry	No. of cases of abortion held in last 10 years for the reason of seeking male child	No. of suicide committed by the widows	No. of female members in Public Puja Committees
Olui	1	1	0	4	0	10
Derepur	2	3	0	2	1	0
Total	3	4	0	6	1	10

Source: Own Survey 2007

We have found by making field work in villages of the district of Paschim Midnapore that participation by women group in PRIs is significantly increased. It does not mean that women become powerful at par with their male counterpart. For the purpose of studying women empowerment in social sector we have also gone through two villages in Paschim Midnapore. A social study is made incorporating several feminist issues like domestic violence, female suicidal death or murder due to dowry, number of cases of abortion which symbolize women liberation (according to Western feminist View), position of widows in the society and the role of female in several civil societies. In those two villages we have taken the entire women group from the age group of 18 to 40. Some specific questions are put to them to be answered; such as whether grown up ladies can marry or choose their life partners on their own in the last 10 years. Answers to these questions do not signify any changes in the mental make up of the guardians of families. In the village Olui only one case and in village Derepur only two cases are found where females could marry on their own choice. This certainly a backwardness on the part of women particularly educated women who still follow the dictates of their parents.

Table 1.10 also shows that some cases of domestic violence are also found, one in Olui and three in Derepur. On the specific question why such kind of domestic violence they are facing, women groups are unable to answer with all satisfaction. It is found that causes of domestic violence against women in spite of the enactment of Article 498A, are: demands of more dowry, birth of girl child repeatedly, over or under sex of the females or their husbands, poverty, and illiteracy. However there is no case of female suicidal death or murder reported from the study villages in the last 10 years. Demands of male children in both villages are also too high. In the last 10 years 4 cases in Olui and 2 cases in Derepur where abortion held for the reason of seeking male child. It does not also signify any form of women liberation in those study villages. In those cases of abortion male partner has always shown his dominance over his female counterpart. It also symbolizes the practice of patriachalism, which could not be done away with by radical movements undertaken by the dominant political party and its allies. Left political movements have no specific agenda of women liberation fearing a considerable loss of vote banks in village societies where males are always dominant. The social status of widows has to some extent changed. Presently, they find their proper places in the larger society although there is no case of remarriage of widows in study villages, which can be cited as an example of the introduction of the new ethos of modernity in rural society too. Another significant aspect comes out of the village Olui where 10 females are included in public puja committees as members. This may be cited as an example of female participation in civil society like 'Barwari puja' committee where women voice is also be taken into consideration. Thus it may be said that ***no revolutionary transformation in regard to women liberation has taken place in those study villages. Changes in this regard are taking place in a slow pace due to propagation by the electronic and all other media as women being a part and parcel of human society***.

FINDINGS

The main findings of our study are:

1. The panchayat representation from the rural poor and weaker section of the society, particularly the women, has been increased to a large extent over time. Therefore with the passage of time, a radical change in the distribution of power at the institutional level has been occurred which is a good symptom of the political empowerment of those sections of the society.

2. So far as organizational representation is concerned, we find a disappointing picture where most of the decision makers at different levels of political organizations are from rich peasants or from businessmen. Our findings show an absence of the poor and weaker sections in the organizational level, which does not signify any radical restructuring of the rural power structure and thus agrarian mobilization loses its momentum.
3. There is no revolutionary transformation in regard to women liberation that has been taken place in our study area. Changes in this regard are taking place in a slow pace due to propagation by the electronic and all other media as women being a part and parcel of human society.

CONCLUDING REMARKS

The question of women's participation in politics through PRIs has been seriously taken up by LFG in West Bengal. The 73rd Amendment has paved the way for their participation in all panchayat institutions. LFG since 1992 has taken care in ensuring reservations of seats. West Bengal was the first state in the country to enact legislation for the reservation of one-third seats for women in PRIs in 1992 before the Constitution was amended in 1993. Our study shows that women face a lot of difficulties due to the patriarchal outlook of the society, inadequate education and negative attitude of their families. However, their participation in PRIs has exposed the potentiality of the women leaders. It is also found that the gains achieved by women through political participation are marginalized by certain incidence of or trends towards dowry, torture and violence against women. In spite of all these negative sides, women members play important roles in the implementation of all rural development programmes. They have shown their consciousness about their legal rights and encourage the fellow women to claim their rights also. We also notice an improvement in the social status of the elected women members, particularly from SC, ST and other backward categories. Not only women but also the poor villagers belonging to SC, ST i.e. dalit groups have also found empowerment and dignity in the rural society.

Inclusion of these age-old backward people of the villages in West Bengal is certainly an event to be reckoned with. Their inclusion in different levels of PRIs has improved their socio-economic status. Whether this inclusion is an authentic one is a big issue to be debated by citing more case evidences from the villages in West Bengal. We have found in our study an upper caste and class biasness of distribution of resources at the levels of PRIs in which ruling party is found dominant. For these reasons poor backward people are found unable to assert newly found political position in PRIs. Therefore, mere inclusion in political process does not symbolize their political empowerment. What they need today is to increase their socio-economic empowerment to concretise their political empowerment. The poor people belonging to SC and ST categories, having no economic resources at their disposal are not in a position to enjoy fruits of political power.

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MICRO-CREDIT: A STUDY OF MICRO-CREDIT USAGE BY SELF HELP GROUP MEMBERS IN GOA

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ABSTRACT
Over the years, micro-credit came to be perceived as an important tool of pro-people development and a magic bullet for poverty alleviation. The present study is basically an attempt to get insights into the usage of micro-credit by members of SHGs in the State of Goa and to ascertain whether the micro credit beneficiaries continue to be dependent on other institutionalized and other channels to avail financial accommodation. For the purpose of the present study, both primary and secondary data have been relied upon. A structured interview schedule was administered to a total of 500 SHG members drawn from a 100 SHGs in the State of Goa. The study findings indicate that the respondents have availed of credit for financing both productive and consumption requirements and that a larger percentage of the respondents have utilised credit availed for non-income generating activities. The data suggests that there is a greater tendency on the part of the poor to use micro-credit for productive and income generating purposes than among the non-poor micro credit beneficiaries. The age of the SHG also has a bearing on the usage of micro credit availed. It has been noted that respondents belonging to SHGs which have been in existence for a longer period of time have a tendency to utilise credit more towards financing non-income generating activities rather than income generating activities. The findings also reveal that the SHG movement has not necessarily eliminated the dependence of the respondents on other financial institutions and channels to source their credit requirements.

KEYWORDS
Micro credit, Usage, income-generating activities, non-income generating activities.

INTRODUCTION
The concept of Micro credit is often equated and used synonymously with the concept of Micro Finance. Micro- credit refers to the disbursal of small amounts of loan to small borrowers. Micro Finance on the other hand is a broader concept and includes the "provision of thrift, credit and other financial services and products of very small amounts to the poor in rural and semi-urban areas for enabling them to raise their income levels and improve their living standards." (NABARD, 1999). Thus while Microfinance is 'Credit Plus', Micro-credit is 'Only Credit'.

According to Robinson, (1998) "Microfinance refers to small-scale financial services for both credits and deposits – that are provided to people who farm or fish or herd; operate small or micro enterprises where goods are produced, recycled, repaired, or traded; provide services; work for wages or commissions; gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and local groups in developing countries, in both rural and urban areas."

The origin of micro-credit in the context of which it is understood in the present financial set up can be traced to the successful initiative of Prof. Mohammad Yunus of Bangladesh in establishing the Grameen Bank in 1983 which attempted at providing small amounts of loan to the poor. The success of this initiative was then replicated in other countries too. The Pilot project of the NABARD wherein SHGs were linked to banks gave a boost to the micro-credit sector in India. The SHG-Banking pioneered and promoted by NABARD has emerged as a primary Microfinance service mechanism for the unbanked poor in India. (Kropp, Suran 2004). Over the years, micro-credit came to be perceived as an important tool of pro-people development and a magic bullet for poverty alleviation. Micro-credit however is distinctly different from other holistic programmes aimed at rural development and poverty alleviation in that, thrift precedes credit and credit follows thrift. Microcredit programmes by providing easy and affordable access to credit and other financial services to poor families can have a host of positive impacts on their livelihoods. (Mohammad Yunus, 2004)

Several impact studies have reported the usage of micro-credit by SHG members. Most of the studies indicate that the borrowers of micro-credit have a tendency to utilize a larger proportion of the loan availed for consumption smoothening. The usage of micro-credit for consumption surpasses that utilized for productive activities. Gopalakrishnan (1998) reported in a study of SHGs in Tamil Nadu that 16% of loans obtained by respondents were utilized for production purposes while 84% was used to finance consumption expenditure. Repeat loans however were largely channelised towards productive uses. These findings are echoed in the study findings of Kumaran (2002) who noted that irrespective of the promoting agency, be it banks or NGOs, demand for consumption loans among SHG members was more than the demand for loans to meet production needs. However Datta and Raman (2001) point out that the average loan taken for business was larger than the average annual consumption loan per member. Jerunabi's (2006) action research which aimed at forming SHGs in rural and urban areas and studying the qualitative and quantitative impact of these groups revealed that a larger percentage of members of both urban and rural groups had utilized loans for consumption and domestic purposes. The present study is basically an attempt to get insights into the usage of micro-credit by members of SHGs in the State of Goa.

OBJECTIVES
1. To study the choice of funding sources opted for by the SHG members.
2. To get an understanding of the usage of micro-credit by SHG members in Goa.
3. To examine the correlation between age of the SHG and micro-credit usage.
4. To find out whether the micro – credit availed adequately meets the credit requirements of the members.

METHODOLOGY
STUDY AREA
The State of Goa which is the study area selected comprises of two districts, North Goa district and South Goa district. While the North Goa district comprises of six talukas, five talukas make up the land mass of the South Goa District. As of March 2008, there are a total of 3305 SHGs in the State of which 1611(48.74%) are credit linked with both commercial and co-operative banks. The SHG programme in the State is driven by banks, the government, various non-government

agencies and social workers. In the present study, SHG from all the eleven talukas of the two districts have been selected. The study findings are based on both primary and secondary data.

SELECTION OF SAMPLE

1. Selection of SHGs: For the purpose of the present study, a total of 100 SHGs were randomly selected. Fifty SHGs were randomly selected from each of the two districts. SHGs of all the talukas are represented in the study. Of the 100 SHGs selected, 50 have been formed by different NGOs operational in the State while the other 50 have been promoted by the State Government under the Swarnjayanti Gram Swarojgar Yojana. In the case of the latter, members belong to the Below Poverty Line (BPL) category whereas in the case of the former, the SHG members are by and large non- BPL.

2. Selection of SHG members: A total of 5 members of each SHG were selected on a random basis. A structured interview schedule was administered to a total of 500 SHG members. The findings of this study are based on the responses elicited from these SHG members and collected during the period September 2007 to March 2008. Furthermore, the study covers the financial transactions, in particular, credit availed by the respondents from the period of their entry into the SHG.

Simple statistical tools such as percentage, cross tabulations etc. have been used for the data analysis. Besides the primary data collected, secondary sources of data viz. journals, newspapers, books and the internet have also been relied upon.

MAIN FINDINGS OF THE STUDY

I] CHOICE OF FUNDING SOURCES

Micro-credit is availed by the SHG members in two forms. On the one hand, members can borrow small amounts of money from the thrift fund and on the other they can also avail credit from the banks via the SHG. The SHG acts as an intermediary, borrows from the bank for the purpose of on- lending to its members. Table 1.1 details borrowings transactions of the respondents. A total of 414 (82.8%) respondents had availed credit, while 46 respondents had never borrowed either from the thrift fund or from the bank.

TABLE 1.1: MICRO-CREDIT AVAILED BY SHG MEMBERS

Borrowing Status	Frequency	Percent	Loan from thrift fund	Percent	Loan from Bank	Percent
Yes	414	82.8	329	65.8	222	44.4
No	86	17.2	171	34.2	278	55.6
Total	**500**	**100.0**	**500**	**100.0**	**500**	**100.0**

Source: Field data

There is a marked preference for credit from the thrift fund. Study findings indicate that while 65.8% of the respondents had sought and availed financial assistance from the thrift fund, the percentage of respondents who had availed of bank credit was relatively less (44.4%). These findings find resonance in the study by Sreelakshmi and N.Shetty, (2008). The preference for loans from the thrift fund can be attributed to the fact that not all of the SHGs are credit linked with banks. Furthermore, respondents are also reluctant to access bank credit due to fear of defaults. However, it is relatively cheaper to borrow from the bank rather than the thrift fund. In the case of the former, the average cost of borrowing is an average 10% per annum whereas in the case of the latter, the highest rate of interest charged by a SHG is 36%. A majority of the SHGs (237) sanction loans from the thrift fund at 24% rate of interest per annum. It is observed from the data that two SHGs grant interest free loans from the thrift fund. With respect to the quantum of loan availed it has been found that while the loan amount availed by the respondents from the thrift fund ranges from a minimum of Rs. 500/- to a maximum of Rs.1,35,000, borrowings by way of on-lending range between Rs.2000 to Rs.3,35,000. While no default in repayment is noted in the case of bank credit, 27(6.5%) respondents have failed to repay credit sourced from the thrift fund in time.

II] USAGE OF MICRO CREDIT

The respondents have availed credit for both Income Generating Activities and Non- Income Generating Activities. It is obvious that the SHG-Bank linkage programme by giving access to the 'unbankable' sections of society has played a significant role in generating employment and building livelihoods. Data indicates that the SHG members have availed of credit for both productive purposes and also to meet their consumption needs. Table 1.2 gives an idea of the purpose for which micro-credit has been used.

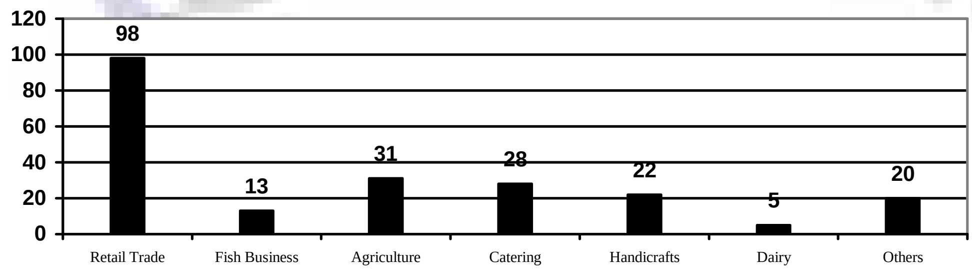
TABLE 1.2: USAGE OF MICRO-CREDIT

Sr. No.	Purpose of loan	Frequency	Percentage
1.	Income Generating Activity	125	30.2
2.	Non-Income Generating Activity	197	47.6
3.	Both	92	22.2
Total		**414**	**100.0**

Source: Field data

It can be inferred from the table 1.2 that while 47.6% of the respondents have borrowed exclusively to finance non-income generating activities, 30.2% have borrowed solely for the purpose of investing in some income generating activity. On the other hand 92(22.2%) respondents have borrowed to meet both consumption and production needs. While a majority of the respondents (69.8%) have utilized loans availed from and through the SHG for various Non-Income Generating Activities, 217(52.4%) members have borrowed for business purposes. Fig.1. and Fig.2. details the usage of micro-credit for Income and Non-Generating Activities respectively.

FIGURE 1: USAGE OF MICRO CREDIT FOR INCOME GENERATING ACTIVITIES



The respondents have availed of credit for a variety of productive purposes. Of the 217 respondents who have availed of credit for the purpose of taking up income generating activities, a majority of them (45.2%) have borrowed to finance retail trade such as sale of vegetables and fruits at the local markets, setting up of general and grocery shops, purchase of raw-materials, sale of ready made garments etc. 5.9% of the respondents belong to the traditional fishing community and have utilized micro-credit for repairs of canoe and purchase of fishing nets. 14.3% of the borrowers have utilized the loan availed in agricultural operations, in particular to purchase seeds, fertilizers, to hire tractors and engage labour. A significant number of the respondents are into catering and are contracted by the State Government to supply mid-day meals to students. Some also prepare sweets and other eatables for sale. 14.3 % (31) of the respondents who are involved in this activity have availed of micro-credit. 22 (10.1%) borrowers have employed the credit availed to finance income generating activities such handicrafts. Just 5 borrowers have used the loan to purchase livestock. The field data reveals that some of the borrowers have lent the funds they have borrowed from the SHG to non-members at a higher rate of interest. Besides others have utilized the loan amount to purchase machinery, finance their spouse's business and make payments towards purchase of movable and immovable assets needed in business operations. Interestingly, just about 7% of the respondents who had availed credit for income generating activities had sought repeat loans for furtherance of these activities.

FIGURE 2: USAGE OF MICRO-CREDIT FOR NON-INCOME GENERATING ACTIVITIES

It is evident from Fig.2. that SHG members make use of the credit availed for a variety of purposes. A majority of the respondents (43.6%) have utilized credit to meet consumption expenditure including purchase of tangible assets. Another important item of expenditure is housing. 30.1% respondents have employed the micro-credit availed for the purpose of house construction and house repairs. Respondents have also used borrowings to finance their earlier debt. The SHG programme has given the members access to funds in times of need and enabled them to meet immediate medical expenses and finance their children's education. Besides, it is also observed that about 20% of the respondents have utilised loans to celebrate social functions and festivals. Study findings also indicate that some respondents operate 'Confres' (An indigenous form of micro-credit prevalent in the State of Goa, also called 'kopri'). They borrow funds from the SHG at lower rates of interest and lend the same through the Confres at exorbitantly high interest rates. Some others have deposited the loan availed from the SHG in the banks for future use. It can be inferred from the pattern of micro-credit usage that the loans sourced by the respondents from the SHG either through the thrift fund or through the Bank by way of on-lending or both have enabled them to improve the quality of their lives.

PROMOTER WISE USAGE OF MICRO CREDIT

The Swarnjayanti Gram Swarozgar Yojana is a Central Government sponsored and State Government supported rural development programme that attempts to address the problem of poverty alleviation. In the State of Goa, the District Rural Development Agencies (DRDAs) of the State Government are the implementing agencies of the scheme. Under this holistic programme, the DRDAs promote SHGs of those citizens who are officially identified as living below the poverty line. The DRDA SHGs therefore comprise essentially of the poor. This is in contrast to the economic status of the members of SHGs promoted by NGOs and other agencies who could be categorized as Non- BPL.

An attempt has also been made in the present study to examine whether the micro-credit usage differs among SHGs formed by the Government under the SGSY and the SHGs promoted by the NGOs (Table 1.3)

TABLE 1.3: MICRO-CREDIT USAGE BY SHGS FORMED BY THE GOVERNMENT AND THE NGOS

Promoting Agency		Frequency	Percentage
Government	Income Generating Activity	79	31.6
	Non-Income Generating Activity	78	31.2
	Both	49	19.6
	Total	206	82.4
	Loan not availed	44	17.6
	Total	**250**	**100.0**
Non-Government Agency	Income Generating Activity	46	18.4
	Non-Income Generating Activity	119	47.6
	Both	43	17.2
	Total	208	83.2
	Loan not availed	42	16.8
	Total	**250**	**100.0**

Source: Field data

It can be inferred from the data presented in table 1.3 that 17.6% and16.8% of respondents belonging to SHGs formed by the Government i.e the DRDA and the NGOs respectively have not availed of any credit either from the thrift fund or from the bank. About 51.2% of respondents of SHGs formed under the SGSY have used micro-credit for income generating activities. In contrast just 35.6% of respondents belonging to SHGs formed by NGOs have employed credit to finance income generating activities. The usage of micro-credit for non-income generating activities by respondents of groups formed by NGOs is comparatively higher (64.8%) compared to groups formed by the DRDA (50.8%). The data suggests that there is a greater tendency on the part of the poor to use micro-credit for productive and income generating purposes than among the non-poor.

III] RELATIONSHIP BETWEEN MICRO CREDIT USAGE AND AGE OF THE SHG

An attempt has been made to examine whether the usage of micro-credit is dependent on the age of the SHG. The selected SHGs have been classified into two broad categories on the basis of their year of formation. While 315 (63%) SHGs have been in existence for a period of five years and below, 185 (37%) of the SHGs have been operational for a period greater than five years. Table 1.4 highlights the micro-credit usage by SHG members belonging to these two categories. It can be inferred from the data that there is a positive relationship between the age of the SHG and the percentage of members availing credit. While in the case of SHGs that have yet to complete five years, 21.6% respondents had not availed of any loan, only 9.7% of the respondents belonging to the SHGs which are above five years have refrained from taking a loan from the SHG.

TABLE 1.4: MICRO-CREDIT USAGE IN SHGS BELOW AND ABOVE FIVE YEARS

Year of Establishment		Frequency	Percentage
5 Years and below	Income Generating Activity	81	25.7
	Non-Income Generating Activity	118	37.5
	Both	48	15.2
	Total	247	78.4
	Loan not availed	68	21.6
	Total	**315**	**100.0**
Above 5 Years	Income Generating Activity	44	23.8
	Non-Income Generating Activity	79	42.7
	Both	44	23.8
	Total	167	90.3
	Loan not availed	18	9.7
	Total	**185**	**100.0**

Source: Field data

However, with respect to usage of micro-credit it is observed that the relationship is negative. The data indicates that a larger percentage of respondents (42.7%) belonging to SHGs above 5 years have utilised credit for non-income generating activity compared to respondents of SHGs which are below five years of age. Like-wise micro-credit usage for income generating activities is marginally lower among respondents of SHGs that are older. 25.7% and 23.85 of the respondents of SHGs below and above five years have employed loans availed for income generating activities respectively.

IV] NEED FOR ALTERNATIVE SOURCES OF CREDIT

While there is no doubt that SHGs have given the poor and the marginalized access to funds, do these micro-loans meet the credit requirement of the SHG households adequately? Or are the SHG members forced to borrow from other alternative sources. The study findings reveal that although there are some respondents who do not feel the necessity of borrowing from the SHG, others need to approach individuals and institutions besides the SHG for financial accommodation. Table 1.5 details the various other sources of credit that have been accessed by the respondents despite being members of SHGs. A total of 160 of the 500 respondents who make up the sample in this study have felt the need to access other channels of credit despite being members of the SHG. Study findings indicate that besides sourcing credit from the SHG, 52 SHG households have borrowed from banks and 66 respondents have felt the need to approach their friends, family and relatives in times of need. Another 23 and 19 of the respondents have borrowed money from the 'confres' and moneylenders respectively at usurious rates of interest.

TABLE 1.5: ALTERNATE SOURCES OF CREDIT

Sr. No.	Sources of Credit	Frequency	Percentage
1.	Banks	52	32.5
2.	Family/Relatives/Friends	66	41.2
3.	Confres	19	11.9
4.	Moneylenders	23	14.4
5.	Total	160	100.0

Source: Field data

While membership of the SHG has provided the members access to credit, members have felt the need to borrow from other sources either because the need for funds is large and therefore cannot be met by the SHG or the members' lack repayment capacity and therefore denied credit by the SHG. The rules and norms adopted by the SHGs governing loan disbursal are also stringent. Some SHGs grant only one loan per member, or a second loan is disbursed to a given member only on repayment of the first. Members in need therefore have no alternative but to source alternate avenues of credit

CONCLUSION

The findings of the present study on the usage of micro-credit by beneficiaries coincide with the findings of other studies on the same topic. It is evident that the usage of micro-credit for consumption and non-income generating activities is proportionately higher. The study indicates that SHG members prefer to borrow from the thrift fund rather than avail of credit from the banks by way of on-lending although the cost of credit in the case of the former is higher than in the case of the latter. With respect to the usage of micro-credit it can be concluded from the study findings that a larger segment of the SHG members utilise credit for non-income generating activities. However it has been observed that it is the poor rather than the non-poor who exhibit a greater tendency to employ micro-credit for productive and income generating activities. It is further observed that while there is a direct relationship between the age of the SHG and the number of members availing credit, the usage of micro-credit for income generating activities is lower among members of SHG which are older. While micro-credit has inevitably provided the poor and lower income groups access to immediate finances, their financial needs are not adequately met as they still have to depend on other channels for financial accommodation.

The significance and utility of micro-credit in the lives of the poor and marginalized cannot be understated. Micro-credit has undoubtedly enabled the poor to participate in income generating activities, support their hearth and homes, supplement family incomes, acquire tangible assets and overall improve their standard of living. It is however imperative that the various Self Help Group Promoting Institutions motivate and educate the SHG members and encourage them to channelise micro-credit towards income generating and more productive usage.

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ROLE OF FDI IN INFRASTRUCTURE DEVELOPMENT IN INDIA

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ABSTRACT

Inflow of Foreign Direct Investment (FDI) in the infrastructure sector has brought about a host of changes in the economy, including putting an end to a large number of government regulations and has given birth to innovative schemes of financing infrastructure projects. India is now the third most favoured destination for FDI, behind China and USA. In fact, UNCTAD has said that India is one among the dominant host countries for FDI in the Asia-Pacific region. Times have been really changing as far as this theme of foreign participation is concerned. However, all said and done, unless there are clear policy instructions with respect to the prioritizing of infrastructure projects and reform of the supportive institutional framework (basically the law and judiciary), invitation to any kind of capital, especially the one from foreign sources, will of no use. In this view, this paper endeavours to give an overview about the infrastructure development in India since the inception of the first five year plan. The paper in essence focuses on the role of FDI in the infrastructure development in India especially since the Liberalisation, Privatisationa and Globalisation era. It also seeks to highlight the sectors in which FDI investments have taken place over the past decades and the changing pattern of FDI investments with respect to the sectors in which the investments are made.The study is broadly based on secondary data and the paper has its significance to the academicians, industrialists as well as to the policy makers.

KEYWORDS

Foreign Direct Investment, Five Year Plan, Infrastructure Development.

INTRODUCTION

Infrastructure is generally a set of interconnected structural elements that provide the framework supporting an entire structure. The term has diverse meanings in different fields, but is perhaps most widely understood to refer to roads, airports, and utilities.

The U.S. National Research Council (NRC) committee cited infrastructure as "...both specific functional modes - highways, streets, roads, and bridges; mass transit; airports and airways; water supply and water resources; wastewater management; solid-waste treatment and disposal; electric power generation and transmission; telecommunications; and hazardous waste management--and the combined system these modal elements comprise. A comprehension of infrastructure spans not only these public works facilities, but also the operating procedures, management practices, and development policies that interact together with societal demand and the physical world to facilitate the transport of people and goods, provision of water for drinking and a variety of other uses, safe disposal of society's waste products, provision of energy where it is needed, and transmission of information within and between communities."

Using a combination of these perspectives, Infrastructure can be structured across the five groups suggested below:

- Group A: Rural Infrastructure: Irrigation, rural connectivity (roads, power, IT), cold chains and mandis, drinking water.
- Group B: Core Infrastructure: Transportation (roads, railways, airports, sea ports, inland waterways); energy (generation, transmission, distribution).
- Group C: Urban Infrastructure: Water, sanitation, sewerage, LRT/MRT/MTS, city-energy distribution, terminals and logistics parks.
- Group D: Land-Intensive: SEZs, industrial parks, new townships, industrial cluster development, IT parks.
- Group E: Social Infrastructure: Healthcare, education, leisure and entertainment, retail, tourism, housing, exhibition and convention centres, hospitality.

Currently there is no clear definition of infrastructure according to the Government of India's Committee on Infrastructure (CoI). However, the CoI examined various Indian statutes that refer to infrastructure to compile a formal list which includes the telecom and power sectors among many others. Surprisingly, the list does not include important sectors of social Infrastructure such as educational institutes or healthcare, which are important for an overall development of the country.

India is growing a at reasonably high pace we can say that because the GDP growth rate for the year 2007-08 was 8.7% which was higher than Singapore which was at 7.7% and USA was far behind at 2.7%. India has been projected to be second largest economy globally by the year 2050. In order to cope up with this level of growth large increase in infrastructure investments will be required. As per the Government of India, Committee on Infrastructure, India's Per Capita Infrastructure Investment Spending for the year 2007 was only USD 41 per annum, which is quite low as compared to China and Brazil which have it at USD 408 and USD 92 respectively. The Gross Capital Formation in infrastructure as percentage of GDP for the year 2007 was approximately 5% but for the future it should be approximately 8% to 9% in order to meet the requirement in infrastructure sector for financial years 2011 and 2012. There are opportunities across all infrastructure sectors and which can be seen from the table No. 1 given below:

TABLE NO. 1: TABLE SHOWING OPPORTUNITIES IN INFRASTRUCTURE SECTOR INVESTMENT IN INDIA (in USD Bn)

Key Sectors	Estimated Investment (FY08-12)
Airports	8
Gas	5
Irrigation	54
Ports	18
Power	150
Railway (incl.MRTS)	63
Roads	76
Storage	5.5
Telecom	65
Water Supply & Sanitation	49
Mining	125

Source: Government of India, Committee on Infrastructure

Looking at the above table we can see that India's Power sector requires the largest investment with nearly USD150 Bn, in power generation as well as transmission and distribution. This is followed by Mining sector which accounts for approximately USD 125 Bn. Significant investment of more than USD 76 Bn, are planned for upgrading the road network. Accordingly, there are other sectors in which also huge investments are planned. Moreover, these opportunities will create demand for financial services, real estate, education and training, advisory and professional services, electronic and IT systems, power equipment, transport equipment, etc.

Foreign Direct Investment (FDI) refers to investment in a foreign country where the investor retains control over the investment. It typically takes the form of starting a subsidiary, acquiring a stake in an existing firm or starting a joint venture in the foreign country. In India as per the rules of liberalization, FDI comes through five routes. These are government (AIA/FIPB) route, RBI (automatic route), NRI investment, and acquisition of shares of unincorporated bodies. Foreign Direct Investment plays an important role in the long-term economic development of a country not only as a source of capital but also for enhancing competitiveness of the domestic economy through transfer of technology, strengthening infrastructure, raising productivity and generating new employment opportunities. While the Government encourages, and indeed welcomes FDI in all the sectors where it is permitted, it is especially looking for large FDI inflows in the development of infrastructure.

India is in the global arena for increased foreign investment termed Foreign Institutional Investment (FII) - and Foreign Direct Investment (FDI). While its size and growth potential make India attractive as a market, the most compelling reason for investors to be in India is that it provides a high Return on Investment (ROI). India is a free market democracy with a legal and regulatory framework that rewards free enterprise, entrepreneurship and risk taking.

Foreign investment is welcome in almost all the areas, except those of strategic concern (for instance, defense and atomic energy) and generally 100% FDI under automatic route is permitted. In such a changed investment climate, India is offering attractive business opportunities in virtually every sector of the economy. In order to encourage flow of investment into the country, the Government of India has set up several investments facilitation agencies, which include:

- Foreign Investment Promotion Board (FIPB)
- Foreign Investment Implementation Authority (FIIA)
- Investment Commission (IC)
- Secretariat for Industrial Assistance (SIA)
- India Brand Equity Foundation (IBEF)

Inflow of FDI in the infrastructure sector has brought about a host of changes in the industry, including an end to large number of government regulations and has given birth to innovative schemes of financing infrastructure projects. India is now the third most favoured destination for FDI, behind China and USA. In fact, the United Nations Conference on Trade and Development (UNCTAD) has said that India is one among the dominant host countries for foreign direct investment in the Asia Pacific region. Times have been really changing as far as this theme of foreign participation is concerned. However, all said and done, unless there are clear policy instructions with respect to the prioritizing of infrastructure projects and reform of the supportive institutional framework (basically the law and judiciary), invitation to any kind of capital, especially the one from foreign sources, will be of no use.

METHODOLOGY

OBJECTIVES

1. This paper endeavors to give an overview about the infrastructure development in India since the inception of the first five year plan.
2. The paper also seeks to highlight the sectors in which FDI investments have taken place over the past years; it also tries to give the state-wise FDI inflows and country-wise FDI Inflows.
3. The paper in essence focuses on the opportunities of FDI in the infrastructure sector in India in the near future and raises the issues and concerns, which are adversely affecting the FDI inflows into India.

DATA SOURCE

The data used for the study is secondary and has been collected from various journals, newspapers and the internet.

LIMITATIONS OF THE STUDY

- The study is based on secondary data and hence it may be affected by the limitations inherent in the secondary data.
- The study mainly focuses on the FDI in the infrastructure sector and hence is restricted to the said sector only.

OVERVIEW OF INFRASTRUCTURE DEVELOPMENT IN INDIA SINCE THE INCEPTION OF FIRST FIVE-YEAR PLAN

Five Year Plans have always occupied a significant position in shaping India's economy. India has completed ten Five-Year Plans (FYP) and is currently implementing the Eleventh Plan. A FYP is considered as a general forecast of what the government intends to do to bring about economic development and providing continuity irrespective of the Government in power. It acts as a guideline/roadmap to the policies and programmes that would be framed to achieve the desired objective of growth, employment, self-reliance and social justice.

This part of the study traces India's focus on infrastructure developments since the first Five-Year plans, integrated into pre and post liberalization era with special emphasis on the eleventh five year plan.

PRE-LIBERALISATION ERA

From 1951 (launch of First Five Year Plan) till 1991, the growth rate had been about 3.5%. The population grew at about 2.5%. With dismal growth and rapidly expanding population, poverty multiplied and unrest grew louder. Most plans fell short on their targets either due to missing investments or monies wasted on money gobbling heavy industry. It is well known that from 1951 to 1991, Indian policy-makers stuck to a path of centralized economic planning accompanied by extensive regulatory controls over the economy. The strategy was based on an 'inward-looking import substitution' model of development. This is evident from the design of the country's Second Five-Year Plan (1956-61), which had been heavily influenced by the Soviet model of development. Several official and expert reviews undertaken by the government recommended incremental liberalization of the economy in different areas, but these did not address the issues facing the infrastructural development of India.

In the pre-liberalization period, infrastructural problems were not the primary impetus or focus of the five-year plan policies till the mid of 1991. The agenda for reforms in the early years was mainly dominated by crisis management accompanied by the need for domestic and external stabilization. The primary motive was on reducing fiscal deficit thereby restoring macroeconomic stability and introducing a package of efficiency oriented reforms aimed at deregulating the domestic economy, reforming trade and exchange rate policies and liberalizing foreign investment policy. Thus we find that at the start of the reform programme infrastructure development was not a significant constraint on the short-term economic performance because there was a slack in the system with a considerable scope for expanding supplies of infrastructure services in the short-run through better utilization of existing capacity. (Ahluwalia and Little, 2005).

1989-91 was a period of political instability in India and hence no five year plan was implemented and between 1990 and 1992, there were only Annual Plans.

The first articulation of a strategy for infrastructural development as a part of the reform programme was introduced in the 8th five year plan which was established at the end of 1992. Thus we find a paradigm shift of the traditional perception of relying completely on the public sector as the natural supplier of infrastructure services towards a positive reliance & preference for private sectors wherever possible. The reason of this shift mainly rested on the lag in ruthless efficiency and the quality of services that was provided by the public sector. It was just opening up the doors for the private participation in infrastructure development but during this process private participants faced a number of problems mainly related to political, governance and institutional constraints. These were making the job of private participants somewhat difficult.

But gradually with the air of globalization and liberalization the government is getting motivated for attracting more private investment and private participation in infrastructure development. Earlier private participation along with public participation was encouraged in power and telecommunications but later road sector and gradually airways, railways, ports, sector etc are being opened to private sector. As it is a well accepted fact that public or budget funding is not adequate in meeting the burgeoning infrastructural needs so the government has to look for other sources of financing.

POST-LIBERALISATION ERA (1991-2001)

In the post liberalisation period (i.e. after 1991), India's infrastructure has been expanding at an accelerated pace to support the economic growth rate of over 9 per cent. The growth has continued apace during the 2007-08 fiscal, with the six core-infrastructure industries growing at the rate of 6.9 per cent during April-September 2007. Significantly, electricity recorded a growth rate of 7.6 per cent compared to 6.7 per cent in the same period last year. Other sectors recording major growth include: petroleum refinery products (9.8 per cent), cement (8.3 per cent) and finished (carbon) steel (6.6 per cent).

According to a consultation paper circulated by the Planning Commission, a massive US$ 494-billion of investment is proposed for the Eleventh Plan period (2007-12), which increased the share of infrastructure investment to 9 per cent of GDP from 5 per cent in 2006-07. This translates roughly into US$ 40 billion of annual additional investment.

The projected sector-wise shares are: 30.4 per cent in electricity, 15.4 per cent in roads and bridges, 13.7 per cent in telecommunications and 12.4 per cent in railways among others. Significantly, 30 per cent of the total investment is expected to come from the private sector (including public-private partnership).

For this, the Government has already taken many proactive measures such as opening up a number of infrastructure sectors to private players, permitting foreign direct investment (FDI) into various sectors, introducing model concession agreements, taking up projects such as the National Highway Development Project and National Maritime Development Programme among others. Some of the projects planned for the next five years include:

- Additional power generation capacity of about 70,000 MW
- Construction of Dedicated Freight Corridors between Mumbai and Delhi, and Ludhiana and Kolkata
- Capacity addition of 485 million MT in major ports, 345 million MT in minor ports
- Modernization and redevelopment of 21 railway stations
- Development of 16 million hectares through major, medium and minor irrigation works
- Modernization and redevelopment of 4 metro and 35 non-metro airports
- Six-laning 6,500 km of Golden Quadrilateral and selected National Highways
- Construction of 1,65,244 km of new rural roads, and renewing and upgrading existing 1,92,464 km covering 78,304 rural habitations

PERFORMANCE, REQUIREMENTS AND RESOURCE CONSTRAINTS

PERFORMANCE

Performance of physical infrastructure in Indian economy in last one and half decades has been mixed and uneven. Table 2 provides the latest achievement of India's physical infrastructure sector. Over years, India's soft infrastructure grew much faster than the hard infrastructure. For example, India's rising trade has been reflected in growing container port traffic, which increased from less than a million in 1991 to about 5 million in 2005 with an annual growth rate of about 266 percent since 1991. In contrast, hardware components, like railways, roadways and airways, witnessed little expansion in last one and half decades. In general, performances of these sectors (hardware) are nevertheless poor, when counted their densities in terms of country's surface area or population. Densities in terms of access or spread of rail and road length clearly indicate that road sector has been successful, compared to railways, in spreading the network as well as providing an access in the economy.

TABLE NO. 2: OVERVIEW OF PHYSICAL INFRASTRUCTURE

Particulars	1991	2000	2005	AAGR(%) (1991-2005)
Railway length (1000km)	62.46	62.76	63.47	0.13
Road Length (million km)	2.35	3.32	3.85	5.32
Fixed Line and Mobile Phone Subscribers (per 1000 people)	7	36	128	150.35
Air Freight (million tons per km)	493.10	547.65	773.22	4.73
Air passenger Carried (million)	10.72	17.30	27.53	13.07
Air transport, registered carrier departures worldwide (million)	0.12	0.20	0.33	14.89
Container Port traffic (million TEUs)	0.15	2.45	4.94	266.01
Electric power Consumption (kWh per capita0	295.02	402.02	457.32	4.58
Electric Power Consumption (kWh)	255.65	408.42	493.78	7.76

Note: AAGR – Annual Average Growth rate(%) for the period 1991 to 2005

Source: World Development Indicators CD ROM 2007, World Bank

What follows is that software part of India's physical infrastructure (like telecom, air and port services) performed well, thus not only helped the country to maintain a faster growth but also integrated the economy with the world market at a faster pace. At the same time, the hardware component of the country's physical infrastructure (e.g. road, rail, power) comparatively grew slowly, thus negated the country's development process.

REQUIREMENTS

The infrastructure investment has increased in the past few years, driven by government initiatives and private participation, but that need to be escalated in coming years. Some of the important infrastructure investments are given in Table 3. The Government of India expects that 22-25 percent of the investment (of US$ 384 billion) required is to come from private sector (Government of India, 2007). According to the Committee on Infrastructure, headed by the Indian Prime Minister, these investments are to be achieved through a combination of public investment, public-private-partnerships (PPPs) and exclusive private investments, wherever feasible. To sum up, the Indian infrastructure space has gained much importance in the past few years, and provides immense opportunities for growth and development.

TABLE NO. 3: REQUIREMENT OF INFRASTRUCTURE INVESTMENTS IN INDIA DURING 2007-2011

Sectors	Anticipated Investments in 10th FYP (2002-2007)	Projected Investment in 11th FYP (2007-2011)	Percentage change
	US$ billion		%
Electricity	70.5	150.4	111.3
Roads and Bridges	31.7	76.1	140.1
Telecom	22.5	65.1	189.3
Railways	20.3	62.2	206.4
Irrigation	32.1	53.1	65.4
Water and Sanitation	15.6	48.6	211.5
Ports	1.3	18.0	1284.6
Airports	2.1	8.5	304.8
Storage	2.3	5.5	139.1
Gas	2.1	5.0	138.1
Total	**200.5**	**492.5**	**145.6**

Source: Government of India (2007)

Therefore, it is clear that there is substantial infrastructure needs in infrastructure sector in India, which, in other words, also offers large investment opportunities. Many of the new investments (such as gas pipelines) seem to be viable on commercial terms and should be suitable for partnership with private investors. For many other infrastructure investments also Public-Private–Partnership (PPP) is emerging as the preferred instrument, where the private sector gets its normal financial rates of return while the public sector partner provides concessional funding based on the long-term direct and indirect benefits to the economy. New instruments such as Viability Gap Funding (VGF) through a special purpose vehicle (SPV) set up recently by the Government of India to fund mega infrastructure projects may be relevant for other Asian countries as well.

RESOURCE CONSTRAINTS FOR INFRASTRUCTURE INVESTMENTS

THE NEED FOR DEBT FINANCING

Infrastructure investment is a priority area for the Eleventh Plan, and close to half of this investment is to be financed by Debt. Yet many of the institutional channels for debt financing are not functioning effectively.

The total requirement of debt by the public and private sectors is likely to be Rs 988035 crore (US$ 247.01 billion). However, the availability of debt financing for infrastructure during the Eleventh Plan is estimated at Rs 825539 crore or US$ 206.38 billion. There is a funding gap of Rs 162496 crore or US$ 40.62 billion for the debt component, the details of which are given in Table 4.

TABLE NO. 4: LIKELY SOURCES OF DEBT (Crores at 2006-07 price)

		2007-08	2008-09	2009-10	2010-11	2011-12	Total Eleventh Plan
1	Domestic bank Credit	49848	63207	80147	101626	128862	423691
2	Non-Bank Finance Companies	23852	31485	41560	54859	72415	224171
3	Pension Insurance Companies	9077	9984	10983	12081	13289	55414
4	External Commercial Borrowings (ECB)	19593	21768	24184	26868	29851	122263
5	Likely Total Debt Resources	102370	126444	156874	195435	244416	825539
6	Estimated requirement of Debt	131718	155704	187333	229571	283709	988035
	US$ Billion	32.93	38.93	46.83	57.39	70.93	247.01
7	Gap between Estimated Requirement and Likely Debt Resources	29348	29260	30460	34136	39292	162496
	US$ Billion	7.34	7.31	7.61	8.53	9.82	40.62

Source: Computation of the planning Commission

The required investment in infrastructure would be possible only if there is a substantial expansion in internal generation and extra-budgetary resources of the public sector, in addition to a significant rise in private investment.

A dynamic institutional structure consisting of a number of development finance institutions promoting a hierarchy of gestation period financing is needed; but the ideology of reforms has no room for the DFIS. Banks have not been encouraged to lend to the infrastructure sector and the corporate bond market is not active enough.

Considering the importance assigned to the sector, the institution of DFIS may have to be resurrected even if its benefits are derivable only in the medium term. It is also possible for banks to expand their existing asset-liability structure as there is a degree of permanence to many of their so-called short term liabilities. And the reform of the commercial bond market has to be undertaken on a war footing.

Therefore, in order to unleash India's full potentials, development of hardware component of India's physical infrastructure perhaps deserves utmost attention. This also indirectly indicates high investment potentials in roadways, railways, power and the associated components in India. At the same time India's development is incomplete without social development and that would require focus on the infrastructure strategy for social research India.

In view of the economic crisis on the one hand, and the perceived importance of foreign capital in the economic development of the country on the other, the Government of India has been making continuous efforts to attract foreign capital during the post-liberalization period. The efforts include providing concessions in taxes, announcing tax holidays and increasing the investment cap in various sectors of the Indian economy. According to the Reserve Bank of India (RBI), India has received total Foreign Direct Investment (FDI) inflows of $50.1 bn since 1991. There has been tremendous progress in the various sectors of the Indian economy due to the inflow of foreign capital.

RELEVANCE OF FDI IN INFRASTRUCTURE DEVELOPMENT IN INDIA

FDI INFLOWS IN INDIA

Foreign Direct Investment (FDI) plays an important role in the economic development of a country. FDI inflows mean the investments which a country receives from other countries, which in turn, help the receiving country to have access to new technologies, capital, processes, management skills, etc. FDI inflows in a country can be in various forms such as direct acquisition of a firm, investment in joint venture, licensing of intellectual property, portfolio investment, etc. The most important potential gain for a firm from FDI is increased competitiveness.

India needs huge investments to fuel economic growth. Massive funds are required for a range of sectors including food, health, education, energy and infrastructure. And to meet this requirement FDI inflows play a major role. According to the World Investment Report 2006 brought out by UNCTAD, India gets only 0.8 percent of global FDI flows and less than three per cent of the total FDI flows from the developing countries. This is reportedly due to procedural hassles and poor governance. Department of Industrial Policy and Promotion (DIPP) under the Ministry of Commerce and Industry, the Reserve Bank of India (RBI) and the Foreign Investment Promotion Board (FIPB) under the Ministry of Finance, government of India are the nodal government agencies directly involved with foreign direct investment issues and are engaged in policy formulation for FDI, procedures and clearance of FDI proposals, etc. In its draft approach paper, the planning commission has said that the level of FDI inflow is much below the country's potential and the nation needed to attract USD $15 billion worth of FDI in the 11th Five Year Plan period.

The FDI Inflows for the years 1996-97 to 2004-05 are given in the below table No. 5. The table also gives the year on year percentage growth of FDI.

TABLE NO. 5: SHOWING FDI INFLOWS INTO INDIA

Years (April to March)	FDI Inflows (USD Mn)	Percentage growth of Total FDI
1996-97	2821	--
1997-98	3557	26.09
1998-99	2,462	-30.78
1999-00	2,155	-12.47
2000-01	2400	11.37
2001-02	4095	70.63
2002-03	5,035	22.96
2003-04	4673	-7.19
2004-05	5652	20.95

Source: RBI Annual Reports from 1996-97 to 2004-05

From the above table we can see that there is negative growth in only three years and that too is reducing over a period of time. As can be seen from the table the FDI Inflows have approximately doubled in 2004-05 as compared to 1996-97.

According to a report released by the RBI, entitled 'International Investment Position (IIP) of India', it was highlighted that the FDI inflows into the country outpaced portfolio investment by almost US $5.6 billion in 2006-07. It further said that the FDI inflows in 2006-07 reached a level of US $21.19 billion. The findings pointed out that during 2003-04 and 2004-05, portfolio investments were much higher than FDI inflows. In 2003-04, FDI inflows were US $6.32 billion as against portfolio investment US $12.01 billion. Similarly in 2004-05, FDI inflows were lower at US $6.64 billion as compared to portfolio investment of US $8.94 billion.

The foreign direct investment (FDI) inflows during 2008-09 (from April 2008 to March 2009) stood at approx. US$ 27.3 billion, according to the latest data released by Department of Policy and Promotion (DIPP). FDI inflows for the last quarter alone of 2008-09 stood at approx. US$ 6.2 billion.

CATEGORY-WISE FOREIGN INVESTMENT IN INDIA

The below given table gives the category-wise Foreign Investment for the period 1996-97 to 2004-05, the Foreign Investment is broadly divided into two parts viz., Direct Investment and Portfolio Investment. On the whole the total FDI Inflows show an increasing trend. Inflow of FDI was USD2400Mn in 2000-01 it then increased to USD 4095 Mn for the year 2001-02. The increase in the inflow of FDI was primarily due to the liberalization of the foreign investment policies. FDI Inflows increased for the year 2002-03, 2003-04 and 2004-05. On the other hand there is also increase in the Portfolio Investment which was only USD 3312 Mn in 1996-97 to USD 9315 Mn in 2004-05. The total Foreign Investment in India was USD6133 Mn in 1996-97 which increased to USD 14967 Mn for the year 2004-05.

TABLE NO. 6: TABLE SHOWING CATEGORY-WISE FOREIGN INVESTMENT IN INDIA (in USD Mn)

Category	**1996-97**	**1997-98**	**1998-99**	**1999-00**	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**
Direct Investment	2821	3557	2462	2155	2400	4095	5035	4673	5652
Portfolio Investment	3312	1828	-61	3026	2760	2021	979	11377	9315
Total Foreign Investment	**6133**	**5385**	**2401**	**5181**	**5160**	**6116**	**6014**	**16050**	**14967**

Source: RBI Annual Reports from 1996-97 to 2004-05

COUNTRY-WISE FDI INFLOWS INTO INDIA0

India is receiving the highest FDI Inflows from Mauritius and the percentage of FDI Inflows from Mauritius to the total FDI Inflows is also seen to be rising in all the three consecutive years i.e. it was 21.53% for 2003-04, in 2004-05 it was 30% and for 2005-06 it was 46.48%. The other major countries are USA, Germany Singapore UK and Netherlands. The details of the same can be seen in the table No. 7 given below:

TABLE NO. 7: TABLE SHOWING MAJOR COUNTRY-WISE FDI INFLOWS INTO INDIA (in Rs. Crore)

Country	**2003-04**	**2004-05**	**2005-06**
Mauritius	2609	5141	11441
USA	1658	3055	2210
Germany	373	663	1356
Singapore	172	822	1218
UK	769	458	1164
Japan	360	575	925
Netherlands	2247	1217	340
Switzerland	207	353	426
South Korea	110	157	269
France	176	537	82
Total FDI Inflows	**12117**	**17138**	**24613**

Source: RBI Bulletin

Mauritius was again the highest contributor to FDI inflows for the fiscal year 2008-09 totaling almost US$ 11.2 billion, while services sector including financial and non-financial services attracted the maximum amount of US$ 6.1 billion during the same period.

Further, India achieved a substantial 85.1 per cent increase in foreign direct investment flows in calendar year 2008—the highest increase across all countries—even as global flows declined by 14.5 per cent, as per an UNCTAD study –'Assessing the impact of the current financial and economic crisis on global FDI flows'. The study also estimates that the FDI investments into India went up from US$ 25.1 billion in calendar 2007 to US$ 46.5 billion in calendar 2008. It also noted that some large emerging economies, such as Brazil, China and India, still remain favourable locations for FDI, particularly market-seeking FDI.

STATE-WISE FDI INFLOWS INTO INDIA

FDI in different states in India have increased steadily since the early 1990s when the Indian economy was opened up to foreign investments. Delhi, Maharashtra, Karnataka and Tamil Nadu are among the leading states that have attracted maximum FDI. The status of FDI in different states of India, during the period beginning from the year January 2000 to October 2006 corroborates the growth of Indian states in sync with the Indian economy. Some of the states in India which have witnessed a massive upsurge in FDI Inflows include Delhi (USD 6,780 million), Maharashtra (USD 5,650.1 million), Karnataka (USD 1,876.1 million), and Tamil Nadu (USD 1,876.1 million). Other states which are in the receipt of FDI Inflows in India include West Bengal, Gujarat, Haryana, Andhra Pradesh, Kerala, and Uttar Pradesh.

TABLE NO. 8: SHOWING STATE-WISE FDI INFLOWS (in USD Mn)

State	**FDI Inflows (For the period Jan 2000 to Oct 2006)**
Maharashtra	5650.1
West Bengal, Sikkim Andaman & Nicobar	334.8
Karnataka	1876.1
Gujarat	898.8
Haryana and Delhi	6780.0
Tamilnadu	1876.1
Andhra Pradesh	1061.4
Kerala & Lakshadweep	75.1
Uttar Pradesh and Uttranchal	3.3

Source : http://business.mapsofindia.com/fdi-india/sectors/

A trade facilitation body UK-India Business Council (UKIBC) survey has ranked Pune as the most suitable place for British investments in India. The survey report, titled 'Opportunities for UK Plc in Emerging Cities in India', also rated eight other cities—Ahmedabad, Chandigarh, Jaipur, Goa, Indore, Kochi, Nagpur and Vadodara—as the most conducive destinations for UK investments in India.

A recent Ernst & Young study predicts Mumbai and Bangalore to be the next global centres of investment along with Shanghai.

INDUSTRY-WISE FDI INFLOWS INTO INDIA

The top sectors attracting highest Foreign Direct Investment (FDI) inflows into the country are: electrical equipments, services sector (financial and non financial), telecommunications, transportation industry, fuels, chemicals, construction activities, drugs and pharmaceuticals, food processing, cement and gypsum products. Huge investment potential exists in the upcoming Knowledge Process Outsourcing (KPO) sector and the real estate industry.

The major sector attracting FDI Inflows is the electrical equipments which also includes computer software and electronics. For the years 2003-04, 2004-05 and 2005-06 on an average this accounts for 22.70% of the total FDI inflows into India. If we take the year 2005-06 then this sector accounts for about 26.40% of the total FDI inflows into India. Other sectors such as telecommunications and services sector are also having a reasonable amount of FDI inflow. The industry wise details of FDI inflows are given in the table below:

TABLE NO. 9: TABLE SHOWING MAJOR INDUSTRY-WISE FDI INFLOWS INTO INDIA (in Rs. Crore)

Industry	**2003-04**	**2004-05**	**2005-06**
Electrical Equipment (Incl. computer software and electronics)	2449	3281	6499
Telecommunications	532	588	3023
Services (Financial and Non-Financial)	1235	2106	2565
Chemical	94	909	1979
Cement and Gypsum	44	1	1970
Transportation	1417	815	983
Drugs and Pharmaceuticals	502	1343	760
Metallurgical	146	881	681
Fuel (Power and Oil)	521	759	416
Food Processing	511	174	183
Total FDI Inflows	**12117**	**17138**	**24613**

Source: RBI Bulletin

Apart from the above sectors the Indian retail market, which is the fifth largest retail destination globally, has been ranked the most attractive emerging market for investment in the retail sector by A T Kearney's annual Global Retail Development Index (GRDI), in 2009.

FDI STRATEGIC SECTORS IN INDIA

Today, the **automotive industry** of India has made its mark worldwide, making India the world's second largest manufacturer of two wheelers; fifth largest manufacturer of commercial vehicles and fourth largest passenger car market in Asia. It also manufactures the largest number of tractors in the world.

Drugs and pharmaceutical industry occupies an important place in the Indian economy. It has made tremendous progress in terms of infrastructure development, technology base creation and production. Today, the industry is manufacturing practically the entire range of the therapeutic products. It is also capable of producing raw materials for the manufacture of a large number of bulk drugs from the basic stage as well as pharmacy machinery and equipments. The industry has achieved global recognition as a low cost producer of quality bulk drugs and formulations. For the past few years the Indian Pharmaceutical Industry is performing very well. The varied functions such as contract research and manufacturing, clinical research, research and development pertaining to vaccines are the strengths of the Pharma Industry in India. Multinational pharmaceutical corporations outsource these activities and help the growth of the sector. The Indian Pharmaceutical Industry has been experiencing a vast inflow of FDI.

The Indian IT and ITS industry is expected to grow to $148 billion by 2012. Over 25% p.a. CAGR expected over the next seven years. India aims to achieve a 50% share in the global off-shored IT and BPO services by 2008 The IT industry is one of the booming sectors in India. At present India is the leading country pertaining to the IT industry in the Asia -Pacific region. With more international companies entering the industry, the Foreign Direct Investments (FDI) has been phenomenon over the year.

In India, the **food processing industry** is one of the largest in terms of production, consumption and export prospects. The Ministry of Food Processing Industries is the main central agency responsible for developing such a vibrant food processing sector. Thus, there exist immense opportunities for investment in the Indian food processing sector arising from the fact that India is one of the major food producers in the world and has abundant availability of a wide variety of crops, fruits, vegetables, flowers, live-stock and seafood. This is reflected in the amount of FDI inflow into the sector which stood at Rs. 333.06 crores (US$ 74.01 million-approx.) in 2005-06 and 2006-07 (till September 2006).

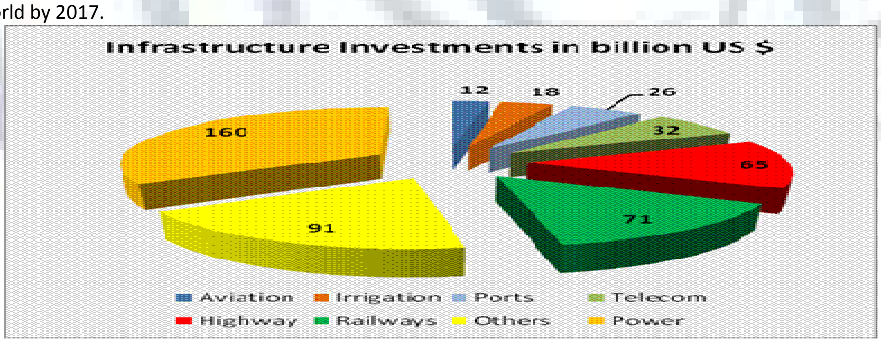
Tourism is one of the largest service industries in terms of gross revenue and foreign exchange earnings. In India, the tourism industry has the potential to grow at a high rate and ensure consequential development of the infrastructure.

In India, the six core **infrastructure** industries having a direct bearing on the infrastructural sector are crude petroleum; refinery products; electricity generation; coal; cement; and finished steel. The index of these infrastructural industries (having a combined weight of 26.7 per cent in the Index of Industrial Production), stood at 219.9 (provisional) and registered a growth of 7.2% in February 2007. The FDI inflow in the Cement Industry in India has increased with some of the Indian cement giants merging with major cement manufacturers in the world such Holcim, Heidelberg, Italcementi, Lafarge, etc.

India's **telecommunication** network is the third largest in the world and the second largest among the emerging economies of Asia. It still continues to grow at an unprecedented pace and is one of the key sectors responsible for India's resurgent economic growth. The number of telephones has increased from 44.97 million (as on 31st March 2002) to 142.09 million (as on 31 March 2006) and 190 million (till December 2006) and 203 million (by February 2007). Also, the tele density in the country has steadily increased from 4.29% (as on 31st March 2002) to 16.83% (as on 31st December 2006). The rapid development of the telecommunication sector was due to the FDI inflows in form of international players entering the market and transfer of advanced technologies. The telecom industry is one of the fastest growing industries in India. With a growth rate of 45%, Indian telecom industry has the highest growth rate in the world.

OPPORTUNITIES FOR FDI IN INFRASTRUCTURE SECTOR IN INDIA

The robust current growth in GDP has exposed the grave inadequacies in the country's infrastructure sectors. The strong population growth in India and its booming economy are generating enormous pressures to modernize and expand India's infrastructure. The creation of world class infrastructure would require large investments in addressing the deficit in quality and quantity. More than USD 475 bn worth of investment is to flow into India's infrastructure by 2012. No country in the world other than India needs and can absorb so many funds for the infrastructure sector. With the above investments India's infrastructure would be equal to the best in the world by 2017.



Source: indiainfraguru.com 2007-09

Major policy initiatives such as deregulation, viability gap funding ,India infrastructure finance company, Committee on infrastructure ,rural infrastructure programme, National urban renewal mission, public private partnerships, Launch of private sector infrastructure funds have been implemented in infrastructure sector.

GOVERNMENT INITIATIVES

In India, currently after the policy changes in February 2009, many sectors in manufacturing are open to 100 per cent FDI under the automatic route. FDI is allowed up to 100 per cent in all these industries except defence production where it is capped at 26 per cent. FDI is not allowed in a few services including retail trading (except single brand), lottery business and gambling. In the permitted services, foreign equity is allowed below 50 per cent.

FDI is currently allowed only up to 49 per cent in scheduled air transport services or domestic passenger airlines. Broadcasting services also have similar rules. Uplinking of non-news television channels is the only broadcasting service permitted to have 100 per cent FDI after clearance by the Foreign Investment Promotion Board (FIPB). Majority foreign equity is not allowed in cable television networks and direct-to-home (DTH) operations. FDI is allowed only up to 26 per cent in print media.

FDI is allowed up to 74 per cent in financial services such as private banks. Insurance, however, can get FDI only up to 26 per cent. Minority foreign equity up to 49 per cent is permitted in asset reconstruction companies (ARCs), stock exchanges, depositories, clearing corporations and commodity. Except for ARCs, the FDI space is capped at 26 per cent for these sectors. In telecommunication services—both basic and cellular—although FDI up to 74 per cent is allowed, only 49 per cent is allowed under automatic route with the rest requiring approval from FIPB.

Till 2012 planned infrastructure investment in India in some key sectors are (at current prices): Modernization of highways -US$ 75 billion, Development of civil aviation US$ 12 billion, Development of Irrigation system- US$ 18 billion, Development of Ports-US$ 26 billion, Development of Railways- US$ 71 billion, Development of Telecom- US$ 32 billion, Development of Power -US$ 232 billion. Thus in the eleventh five year plan ,investment in the above sectors (Aviation infrastructure ,Construction infrastructure, Highway infrastructure ,Power infrastructure, Port infrastructure ,Telecom infrastructure) will be US$ 384 billions(Rs 17,20,000 Crores) considering the huge infrastructure market potential in India. In addition to the above, investments to the tune of US$ 91 billions have been planned in other infrastructure sectors like Tourism infrastructure ,Urban infrastructure ,Rural infrastructure, SEZs ,and water infrastructure and sanitation infrastructure thus making the total infrastructure investments in the eleventh plan period 2007-08 to 2011-12 as US$475 billions. Domestic and global infrastructure funds have exposure to Indian infrastructure sectors.

According to the findings of a survey conducted by the Federation of Indian Chamber of Commerce and Industry (FICCI), 70 per cent of foreign investors surveyed are making profits from their Indian operations. The survey notes that the perception about India as manufacturing base has reasonably improved. It further points out that foreign investors are most dissatisfied with the infrastructure situation of the country, with 54 per cent of the companies rating the condition of roads and highways as bad and 42 per cent rating the quality of ports and power facilities as bad.

ISSUES AND CONCERN

In the present scenario it is important that the required or desired level of infrastructure mainly physical, social and governance aspects should back the growth of India. The inequality in the level of infrastructural development in the different states of India is bringing a special challenge to the policy makers and researchers to recognize the radical fissures in Indian infrastructural system and bring about the innovative solutions specially related to its structuring, and financing modes and schemes thus giving Indian infrastructure a new 'renovated identity'. The attempts should also be made in identifying the economic value of infrastructural investment and thereby looking on the fact that whether additional infrastructure investments contributes to economic growth.

Elberts (2002) raised this key question of whether additional infrastructural investments on the margin contribute to economic growth. The other questions that can help in judging and defining the economic value of infrastructure investment comprise of – will investment

- Improve productivity?
- Contribute to value addition?
- Create new jobs?
- Improve environmental quality?
- Enhance quality of life?
- Improve low-wage workers' access to jobs?

The task of the policy makers do not end here, they are also responsible to look for financing modes, construction modes, designing of regulatory agency and assessment of the risks related to the project. In addition to these they must have a vision of maintenance part of the infrastructure build up. This shows the level of responsibility and management on the part of policy makers that they should strategize. For this the policy makers may look forward to the role of MNCs in boosting up economic development via narrowing infrastructural lacunae.

Achieving high volumes of private investment in infrastructure is not easy. It is necessary to develop an environment, which is both attractive to investors and also seen to be fair to consumers, especially since many (but not all) infrastructure projects have an element of monopoly. This calls for an environment in which either the market itself is competitive giving consumers a choice among different suppliers, as in the case with telecommunications or freight container carriers; or concessions are given to the most competitive bidders in an environment where regulatory system limits user charges to reasonable levels and regulations set appropriate standards of service as in the case of airports, ports and roads.

It is seen that except for a few large projects in a handful of cities, paucity of urban infrastructure projects is a standing problem. Although city mass transport systems and airports have found place in developmental plans, essential services such as roads, drinking water, sewerage management, drainage, and primary health are still greatly under developed.

Besides, even if allocation in the Infrastructure in India is raised with a greater inflow of FDI and a large participation of private sector, the immediate problem will still remain, since, infrastructure is subjected to long gestation period. Consequently, the inadequacy of infrastructure in India will continue for quite some time, unless technology upgradation can be done in the infrastructure production, including construction activities, for reducing the gestation lags and simultaneously improving the quality of products. With this infrastructure limitation any indiscriminate growth may lead the economy of the country to a situation of over-heating and a further rise in inflation.

In spite of the fact that India is strategically located with access to a vast domestic and South Asian market, its share in world's total flow of direct/portfolio investment to developing countries is dismally low. China, with GDP size 2.2 times of India, is able to attract 20 times the FDI inflow to India. Similarly, Singapore, Indonesia, Philippines, and Thailand also attract greater amounts of foreign investment than India.

Whether the trend toward private infrastructure is sustained will depend on transparent and competitive solutions that render price regulation unnecessary or, where that is not possible, price regulation that balances the interests of developers, consumers, and governments. Ultimately, it is in the developers' interest to help establish the system that will regulate their behavior. Such companies as AT&T of the United States, Germany's RWE, and Hong Kong's China Light and Power have actively helped to develop regulatory solutions, which allowed them to deflect pressure for nationalization.

Apart from the issues discussed above there are some major bottlenecks faced by India in attracting FDI's for Infrastructure development:

DEBT

Many of the institutional channels for debt financing are not functioning effectively. Banks have not been encouraged to lend to infrastructure sector and the corporate Bond market is not active enough.

CORRUPTION

Corruption accompanied by red-tapism remains one of the prime reasons that is responsible for keeping out the precious FDI from the country. In a study conducted by Transparency International on the annual corruption perception index (CPI), India's score has remained the same for two consecutive years at 2.7. In the same period Pakistan improved from 2.3 to 2.6 and China from 3.1 to 3.5. The higher the score, the less corrupt is the country.

TAX BENEFITS

Though India is trying to attract FDI by offering a lot of sops to the investors, it is not enough when we compare it to our competitors in the region. Apart from that, corporate India has a very high direct tax burden of 40 per cent while most of the East Asian countries have it in the range of 15 to 30 per cent. Even the much-hyped SEZs (Special Economic Zones), which were conceived with the idea of offering tax benefits and world-class infrastructure, have not yet taken shape.

INFRASTRUCTURE

The former and the present governments' dedication to the 'golden quadrilateral' project is worthy of praise. But the project is not as yet complete because we have been unable to acquire land for it. When complete, it will connect the four major metros with wide silky highways. A freight corridor has also been proposed on similar lines. But even after months this project is still on paper. According to the India infrastructure report, we need to invest in the range of $115-130 billion in the next five years to meet our infrastructural needs. Though it goes without saying that the pivotal role in arranging for such huge investment is to be played by foreign capital, it is worth seeing how the government is going to woo them, especially, when there have been no successful huge investments in the sector till now.

To top it all, our metros are pitifully deficient in providing a world-class experience to an average foreigner. Starting from locating road signs and public utilities to finding a place of interest or booking a railway ticket, everything is so tricky. A serious effort in town planning along with changing public outlook will go a long way in both attracting FDI and tourists.

CONCLUSION

Improving India's infrastructure would propel economic growth, create jobs, boost domestic consumption, lower costs and stimulate exports. If its infrastructure were better, the country's impoverished rural sector could even be transformed into a leading exporter. On the other hand, if infrastructure improvements continue to lag, foreign investment could stall and development would concentrate in service industries such as IT outsourcing. This would exacerbate income disparities, feed social pressures and raise the potential for unrest.

The definition of infrastructure for attracting FDI is related to physical, social, institutional and governance aspect. We need to establish a two-way link between FDI and infrastructural development. As infrastructure development can serve as a distinctive determinant to attract more FDI leading to economic development which in turn lead to the development of infrastructure sector with FDI acting as a mode of financing the projects and infrastructural industries. Although the scope of infrastructure is not just linked with FDI; it can also be viewed as a contributor for raising competitiveness among regions and countries.

Apart from this, provision of quality and efficient infrastructure services is essential to realize the full potential of the emerging Indian economy. Indian government's first priority is therefore rising to the challenge of maintaining and managing high growth through investment in infrastructure sector, among others. To sustain 9 percent growth, the Government of India has estimated that an investment of over US$ 492.5 billion during the 11th Five Year Plan (2007-2012) is required. Therefore, there is substantial infrastructure needs in infrastructure sector in India, which, in other words, also offers large investment opportunities. Public-Private–Partnership (PPP) is emerging as the preferred instrument, where the private sector gets its normal financial rates of return while the public sector partner provides concessional funding based on the long-term direct and indirect benefits to the economy. New instruments such as Viability Gap Funding (VGF) through a special purpose vehicle (SPV) set up recently by the Government of India to fund mega infrastructure projects may be relevant for other Asian countries as well.

Economists believe that additional $20 Billion a year for next ten years will drive up GDP growth additional 2 –3% from the current level of 6.5 –8%. If these monies arrive in form of FDI, it is good for the country. If it arrives in form of FII, it is still good, but it has to be controlled. Internal resources and withdrawal from foreign reserves, trade loans, long term financing from World Bank etc. will add additional luster to the investment plans.

All the above will happen, if the planned structural changes to the Indian economy are concurrently made and country's bureaucratic structure is made investor friendly. Other legislative changes needed to ensure the safety of investor's money are made concurrently. The recent changes in India's patent rules and regulation are steps in the right direction.

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AN EMPIRICAL ANALYSIS ON BAD LOANS IN PERSONAL LOAN (WITH SPECIAL REFERENCE TO RURAL BANKS IN ODISHA)

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ABSTRACT

The quantum of NPA of Indian Banking has undergone a significant decline. Still it is high by international standards and posing a serious problem of the Indian banking sector affecting its earning capacity and profitability. Present paper makes an attempt to analyze the quantitative trend and pattern in growth of NPA with reference to Personal loan scheme. An effort has been made to analyze the causes of default by surveying in rural, urban and semi-urban areas and the officials of banks of Rural Banks. For the purpose of confidentiality the name of branches has not been disclosed. Khurada& Cuttack districts of Odisha was selected for the study from the point of view of accessibility of the researcher to collect the data and able to finish the research with in a stipulated period. Different factors causing NPA on personal loan scheme are analyzed and suggestions made to overcome the problem.

KEYWORDS
NPAs, Personal loan, Total Score, Ideal score & Least score.

INTRODUCTION

The policy in respect of rural credit since 1951 was to widen the role of the institutional credit agencies towards replacement of the non-institutional credit agencies, specially the private money-lenders as far as possible. Findings of the All Indian Rural Credit Survey Report of 1951-52 revealed that cooperative credit institutions played an almost insignificant role in extending credit to the agriculturists. In 1951-52, only 3.1 per cent of the total credit needs of the cultivators were met by them. Governmental agencies supplies an equal proportion and the rest of the credit needs were met by the professional and agriculturist money lenders. Other concerned committees, too, pointed out similar problems in dealing with this question. The rate of interest charged by the money lenders was exorbitant- much above the maximum rate prescribed by the State Government and very often it was out of proportion to the risk involved. They were able to resort to questionable practices because of the "helplessness, ignorance and necessity of the borrowers"[1] these practices included:

- Demand for the advance rent,
- Demand for a present for doing business known as Girah Kholai (purse opening),
- Taking of thumb impression on a blank paper with a view to inserting any arbitrary amount at a later date if the debtor becomes irregular in payment of interest,
- General manipulation of the accounts to the disadvantage of the debtor
- Insertion of written documents of sums considerably in excess of the actual money lent and
- Taking of conditional sale deeds in order to provide against possible evasion of payment by the debtor [2]

To these may be added, possible exploitation of the poor borrowers through their contractual obligation to sell output only through the money lenders at a price lower than what could have been obtained in the market.[3] The poor villagers are permanently tied to the money-lender by perpetual poverty in which their expenses exceed their income every year compelling them to take loans. On an examination of the strengths and weakness of the rural credit system dominated by the non-institutional credit agencies, the All India Rural Credit Survey Committee recommended the organisation of multipurpose cooperatives which will provide integrated credit facilities linking production with marketing of inputs, processing and warehousing activities offered only viable remedy to the credit problems of the villages of India [4]. On the basis of recommendation of the All India Rural Credit Survey Committee (AIRCSC), the Government of India lent its support to creating a three tier cooperative credit structure consisting of an apex body at the state level (State Cooperative Bank), an intermediary layer of District Central Cooperative Banks (DCCB or simply CCB)- at the district level and the primary credit societies at the base level. The primary credit societies were divided into primary agricultural credit societies (PACS) and primary non-agricultural credit societies. The latter were meant for meeting the needs of rural credit for non-agricultural purposes.

The word NPA is not something new to the bankers. It is regular but disguised loan asset. As everyone knows, a portion of loan assets may become NPA. An asset becomes non-performing when it ceases to generate income for the bank. Prior to 31st March, 2004 a non-performing asset was defined as a credit facility in respect of which the interest or installment of principal has remained *past due* for a specified period of time which was four quarters. Due to the improvements in payment and settlement system, recovery climate, up gradation of technology in the banking system, etc, it has been decided to dispense with *past due concept*, with effect from March 31st 2004. Accordingly, as from the date, a non-performing asset (NPA) is an advance where:

- Interest and/ or installment of principal remain overdue for a period of more than 90 days in respect of tern loans.
- The account remains out of order for a period or more than 90 days, in respect of an overdraft/ cash credit (OD/ CC).
- The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted.

- Interest and /or installment of principal remains overdue for two harvest seasons but for a period not exceeding two half years in the case of an advance granted for agricultural purpose and
- Any amount to be received remains overdue for a period of more than 90 days.

OBJECTIVE OF THE STUDY

- To study the factors responsible for NPA of Personal loan
- Studying the problem in relation to Personal loan
- To give suggestions to overcome the problem of NPA on working Personal loans

RESEARCH UNIVERSE AND METHODOLOGY

With reference to the selection of the research universe the state of Odisha has been selected with specifications to the compulsions of the geographical territory, linguistic boundary, and administrative settlement commonness. Odisha is an Eastern Indian state, the state boundaries are on the Bay of Bengal Sea. South- Andhra Pradesh, West – Chhattisgarh and Jharkhand, North- West Bengal having a total area of 1,55,707 Square Kilometers with total population of 36,706,920 (as per Indian census survey-2001) , population density 236 per Square Kilometers, Sex Ratio 972 literacy rate of 63.61%. The state is comprising of 30 districts (Administrative Divisions) and 58 Sub-Divisions.

SAMPLING PLAN

In support to the objective of the research there is a primary research through questionnaire administration method in the field through stratified random sampling method covering the state through regional, geographical, economic, cultural, lingual and settlement wise and to analyze the data and derive results from it perception score method used. This method is easy to use and taken as suitable method to compare

Category	Rural area	Urban area	Semi-urban area
Male (20-40) age group	24	22	19
Female (20-40) age group	13	11	14
Male (more than 40 age group)	18	15	16
Female (more than 40 age group)	13	10	11
Bank employees	14	12	13
Total	82	70	73

LIMITATIONS OF THE STUDY

- The survey is restricted to Khurda and Cuttack districts of Odisha.
- The sample is limited; it may not represent the view of all the borrowers of personal loan
- The study conducted for the period of 4 months i.e .January 2011 to April 2011, and not conducted for the extended period of time.

RESPONDENTS' PERCEPTION WITH REGARD TO NPAS ON PERSONAL LOAN/ HYPOTHESIS

To measure the perception level of the participants with regard to NPAs on Personal loan the various variables identified as In this regard scores have been assigned as +3,+2,+1,0 and -1 for the responses of the respondents " Strongly agree", " Agree", " Neutral", " Disagree" and " Strongly disagree" respectively. Final scores for each feature are calculated by multiplying the number of response by the weights of the corresponding response.

CALCULATION OF RESPONDENTS' PERCEPTION: IDEAL AND LEAST SCORES

Ideal scores are calculated by multiplying the number of respondents in each category with (+3) and product with total number of attributes. Least scores calculated by multiplying the number of respondents in each category with (-1) and the product with number of attributes in the questionnaires.

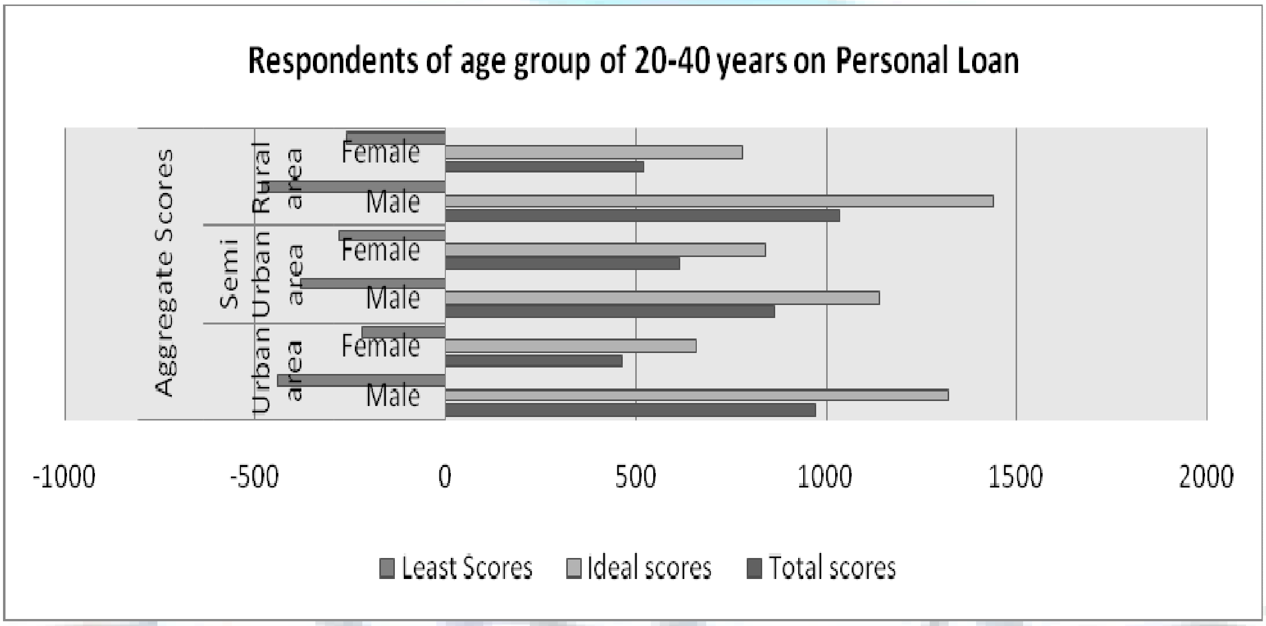
TABLE-1: **CALCULATION OF RESPONDENTS' PERCEPTION: IDEAL AND LEAST SCORES**

Particulars	Equation	Ideal score	Equation	Least score
Rural male (between 20-40 years of age)	20x3x24	1440	20x24x-1	-480
Rural female (between 20-40 years of age)	20x3x13	780	20x13x-1	-260
Urban male (between 20-40 years of age)	20x3x22	1320	20x22x-1	-440
Urban female (between 20-40 years of age)	20x3x11	660	20x11x-1	-220
Semi-urban male (between 20-40 years of age)	20x3x19	1140	20x19x-1	-380
Semi-urban female (between 20-40 years of age)	20x3x14	840	20x14x-1	-280
Rural male (above 40 years)	20x3x18	1080	20x18x-1	-360
Rural female (above 40 years)	20x3x13	780	20x13x-1	-260
Urban male (above 40 years)	20x3x15	900	20x15x-1	-300
Urban male (above 40 years)	20x3x10	600	20x10x-1	-200
Semi- urban male (above 40 years)	20x3x16	960	20x16x-1	-320
Semi-urban female (above 40 years)	20x3x11	660	20x11x-1	-220
Rural bank officials	20x3x14	840	20x14x-1	-280
Urban bank officials	20x3x12	720	20x12x-1	-240
Semi-urban bank officials	20x3x13	780	20x13x-1	-260

TABLE-2: RESPONDENTS OF AGE GROUP OF 20-40 YEARS ON PERSONAL LOAN

Variables	Aggregate Scores					
	Urban area		Semi Urban area		Rural area	
	Male	Female	Male	Female	Male	Female
Willful default	51	22	39	27	60	24
Unforeseen domestic problems	50	23	36	30	54	26
Low income generation from project undertaken	43	24	38	33	52	25
Misutilization of funds	48	21	39	30	56	28
Dispute among partners/distributors	46	27	43	31	59	28
Inefficient management	46	25	47	26	62	28
Business competition	51	26	45	28	61	25
Marketing problem of the products	45	21	44	29	60	26
Technology problems	45	23	43	30	45	30
Lack of fund management expertise	44	29	44	26	37	29
Lack of adequate capital	52	19	48	28	41	32
Wrong identification of beneficiary	53	23	46	31	49	26
Inaccurate pre-sanction security and appraisal	54	27	40	33	50	26
Target oriented approach to lending by the bankers	55	21	39	33	52	25
Absence of credit information sharing among the financial institutions	50	24	43	32	49	19
Delay in disbursement of loan amount	48	24	48	35	53	22
Weak monitoring	49	24	46	35	38	24
Inadequate law to take appropriate action	52	21	47	33	55	23
Delay in project implementation	45	19	45	37	50	28
Government interference and its policy	46	20	43	28	51	26
Total scores	**973 (73.71)**	**463 (70.15)**	**863 (75.70)**	**615 (73.21)**	**1034 (71.81)**	**520 (66.67)**
Ideal scores	**1320**	**660**	**1140**	**840**	**1440**	**780**
Least Scores	**-440**	**-220**	**-380**	**-280**	**-480**	**-260**
No. of Respondents	**22**	**11**	**19**	**14**	**24**	**13**

Source: Annexure 1, 2,3,4,5 &6

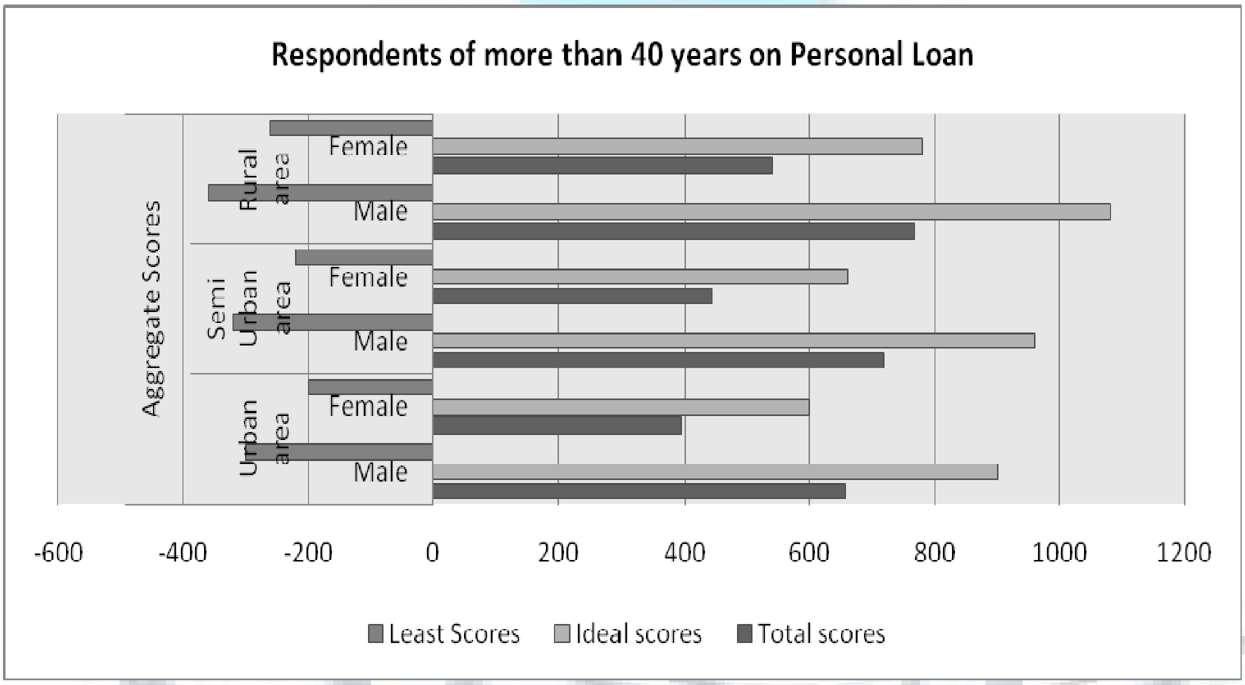


In the table 2, the total scores are 973, 463,863, 615, 1034 and 520 as against this the ideal scores are 1320, 660, 1140, 840, 1440 and 780 respectively for the urban male & female, semi-urban male & female and rural male & female for the respondents age group of 20-40. The percentages of total score to the ideal score are 73.71, 70.15, 75.70, 73.21, 71.81 and 66.67. The percentage is low in case of rural female and high for the semi-urban male. The average percentage is 71.88. Hence the various attributes considered for the NPA on personal loan seems to be holds good for this age group.

TABLE-3: RESPONDENTS OF MORE THAN 40 YEARS ON PERSONAL LOAN

Variables	Aggregate Scores					
	Urban area		Semi Urban area		Rural area	
	Male	Female	Male	Female	Male	Female
Willful default	33	20	35	19	40	27
Unforeseen domestic problems	32	16	34	22	41	26
Low income generation from project undertaken	36	23	32	21	36	24
Misutilization of funds	29	15	36	24	35	27
Dispute among partners/distributors	33	21	39	20	34	25
Inefficient management	33	24	33	19	34	33
Business competition	34	14	34	17	34	30
Marketing problem of the products	32	22	36	20	31	28
Technology problems	39	19	36	21	38	34
Lack of fund management expertise	34	16	38	24	46	26
Lack of adequate capital	31	20	38	24	44	25
Wrong identification of beneficiary	32	21	39	22	44	23
Inaccurate pre-sanction security and appraisal	31	19	35	28	41	25
Target oriented approach to lending by the bankers	29	17	34	26	40	24
Absence of credit information sharing among the financial institutions	36	22	36	25	37	25
Delay in disbursement of loan amount	33	23	28	26	36	26
Weak monitoring	32	24	37	24	34	29
Inadequate law to take appropriate action	30	20	38	21	40	25
Delay in project implementation	34	17	41	19	43	28
Government interference and its policy	33	22	39	22	40	31
Total scores	**656 (72.89)**	**395 (65.83)**	**718 (74.79)**	**444 (67.27)**	**768 (71.11)**	**541 (69.36)**
Ideal scores	**900**	**600**	**960**	**660**	**1080**	**780**
Least Scores	**-300**	**-200**	**-320**	**-220**	**-360**	**-260**
No. of Respondents	**15**	**20**	**16**	**11**	**18**	**13**

Source: Annexure 7,8,9,10,11 &12

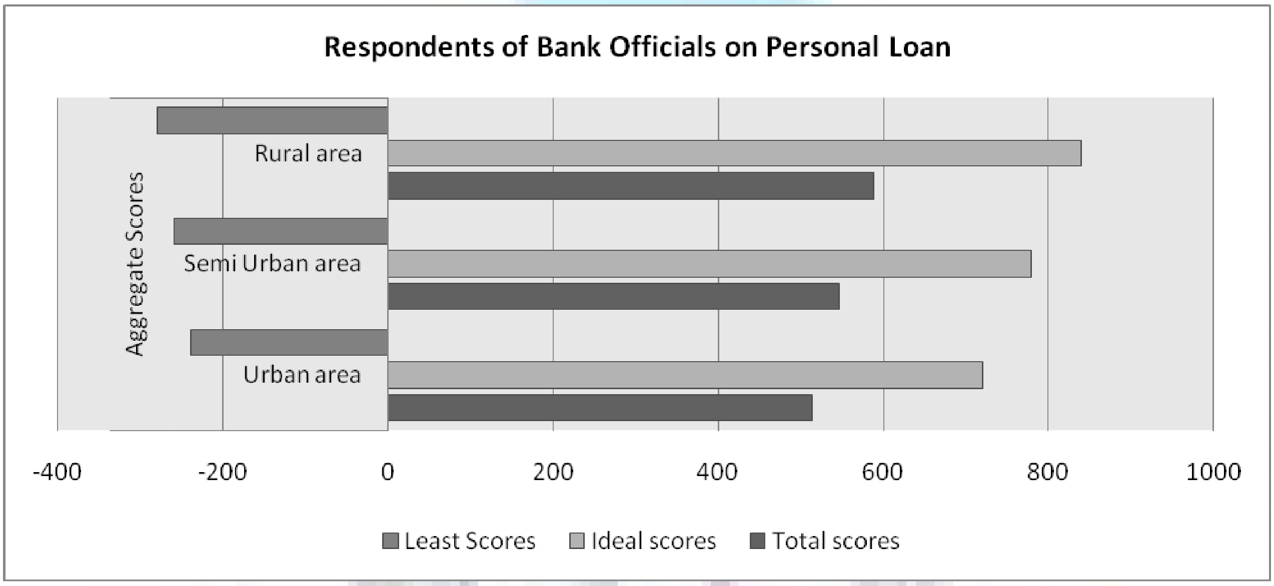


In the table 3, the ideal scores are 900,600,960,660, 1080 and 780 as against the total scores are 656,395,718,444,768 and 541 for the urban male & female, semi-urban male & female and rural male & female respectively for the respondents of age group of more than 40 years. The percentages of total score to the ideal scores are 72.89, 65.83, 74.79, 67.27, 71.11 and 69.36 respectively. The percentage is low in case of urban female and high for the semi-urban male respondents. The average percentage is 70.21. Here also there is significant support for the various variables identified for the NPA on personal loan.

TABLE-4: RESPONDENTS OF BANK OFFICIALS ON PERSONAL LOAN

Variables	Aggregate Scores		
	Urban area	Semi Urban area	Rural area
Willful default	25	28	30
Unforeseen domestic problems	24	27	29
Low income generation from project undertaken	27	24	27
Misutilization of funds	25	21	30
Dispute among partners/distributors	23	26	34
Inefficient management	26	27	29
Business competition	22	27	26
Marketing problem of the products	25	25	28
Technology problems	23	25	27
Lack of fund management expertise	27	29	24
Lack of adequate capital	26	28	29
Wrong identification of beneficiary	28	29	30
Inaccurate pre-sanction security and appraisal	30	25	27
Target oriented approach to lending by the bankers	28	28	31
Absence of credit information sharing among the financial institutions	27	25	28
Delay in disbursement of loan amount	24	26	31
Weak monitoring	26	31	33
Inadequate law to take appropriate action	23	31	35
Delay in project implementation	26	33	32
Government interference and its policy	29	31	29
Total scores	**514 (71.38)**	**546 (70)**	**589 (70.12)**
Ideal scores	**720**	**780**	**840**
Least Scores	**-240**	**-260**	**-280**
No. of Respondents	**12**	**13**	**14**

Source: Annexure 13,14 &15



In the above table 4, the total scores are 514, 546 and 589 as against this the ideal scores are 720, 780 and 840 respectively for the urban, semi-urban and rural bank employees. The percentages of total scores to the ideal scores are 71.38, 70 and 70.12 respectively. The average percentage is 70.5 which is quite good in support of various variables identified for NPA in personal loan.

The following Model may help to control the Non Performing Assets of Personal Loans.

- General compromise settlement policy for all loan accounts.
- While making pre-lending appraisal, the repaying capability of the borrower must be ascertained by the bank employee carefully.
- In the same way, post-lending supervision and approaching the borrower at the right time for repayment may prove effective in the controlling of NPA.
- In case willful defaulters, the bank must flash their photos and warn them through the local news paper and if there is no response, stern action will have to be taken with the help of the legal authority.
- The legal system must be effective: the Government of India and /or the RBI have initiated many legal measures to recover over dues. However, as there are some flaws in each legal measure, they need improvement made in order to bring down the level of NPA.
- Dynamic people are to be recruited to collect doubtful debts and for better asset liability management.
- Political pressures are to be resisted in the operation of banks.
- Banks must operate in a democratic environment.
- Banks have to adopt professionalism and accountability in their functioning.
- New technologies should be introduced to reduce administrative costs and increase the profit margin.
- Banks must transparent in their functioning and accountable to share holders and public to maintain international standards of corporate governance.
- Sanctioning authority should not succumb to external pressure.

CONCLUDING NOTE

NPAs are seriously affecting the efficient management of funds. It affects the profitability of the banks and reduces the availability of resources for mobilization besides increasing their costs. It also puts a question mark on the viability and solvency of the organization. Causes of default identified through field surveys need to be sorted out. Concerted efforts are required at the bank level to improve the credit appraisal and monitoring skills of the managers so that potential default can be identified at an early stage. The occurrence s of NPA may not avoidable entirely but they can be managed effectively. The fresh incidences of NPAs should be avoided but not at the cost of fresh deployment of credit.

REFERENCES

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3. Rural Banking and Poverty Alleviation, Bhaktapada Sinha Roy (2007),p-26
4. RBI, All India Rural Credit Survey, Vol.II, op.cit, chapters VIII and IX.

ANNEXURES

ANNEXURE-1 : PERCEPTION TOWARD PERSONAL LOAN(24)

Variables	*Opinion of Rural male (age group between20-40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	18	3	1	1	1	60
Unforeseen domestic problems like death, divorce, illness and marriage	15	5	1	1	2	54
Financial problems	14	5	2	1	2	52
Misutilization of funds	16	3	3	1	1	56
More than one loan	18	2	2	1	1	59
Wrong identification of loanee	20	1	1	1	1	62
Inaccurate pre-sanction security and appraisal	19	2	1	1	1	61
Target oriented approach to lending by bank	18	3	1	1	1	60
Absence of credit information sharing among different financial institutions	15	1	2	2	4	45
Delay in disbursement facility	10	5	2	2	5	37
Weak monitoring	11	6	1	1	5	41
Inadequate law to take appropriate action	12	7	1	2	2	49
Lack of initiative on the part of bank employees	13	6	1	2	2	50
Absence of genuine guarantor	12	8	1	2	1	52
More dependent member and higher financial burden	13	6	1	1	3	49
Defaults are more in case of self-employed	12	8	2	1	1	53
Defaults are less in case of service holders	11	3	3	3	4	38
Defaults are less in case of women borrower	13	8	1	1	1	55
Chances of default are less in case of government employees	12	7	2	1	2	50
Chances of default are more in case of private sector employees	12	8	1	1	2	51

Source: Compiled from field survey

ANNEXURE-2 : PERCEPTION TOWARD PERSONAL LOAN(13)

Variables	***Opinion of Rural female (age group between20-40 years)***					
	Strongly agree	***Agree***	***Neutral***	***Disagree***	***Strongly disagree***	***Score***
	3	*2*	*1*	*0*	*-1*	
Willful default	7	2	1	1	2	24
Unforeseen domestic problems like death, divorce, illness and marriage	7	2	2	1	1	26
Financial problems	7	2	1	2	1	25
Misutilization of funds	7	3	1	2	0	28
More than one loan	7	3	2	0	1	28
Wrong identification of loanee	8	2	1	1	1	28
Inaccurate pre-sanction security and appraisal	8	1	1	1	2	25
Target oriented approach to lending by bank	8	1	1	2	1	26
Absence of credit information sharing among different financial institutions	8	2	2	1	0	30
Delay in disbursement facility	9	1	1	1	1	29
Weak monitoring	9	2	1	1	0	32
Inadequate law to take appropriate action	9	0	1	1	2	26
Lack of initiative on the part of bank employees	6	4	1	1	1	26
Absence of genuine guarantor	5	5	1	1	1	25
More dependent member and higher financial burden	5	3	1	1	3	19
Defaults are more in case of self-employed	5	4	1	1	2	22
Defaults are less in case of service holders	5	4	2	1	1	24
Defaults are less in case of women borrower	5	4	1	2	1	23
Chances of default are less in case of government employees	5	6	1	1	0	28
Chances of default are more in case of private sector employees	6	4	1	1	1	26

ANNEXURE-3: PERCEPTION TOWARD PERSONAL LOAN(22)						
Variables	*Opinion of Urban male (age group between20-40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	13	6	1	1	1	51
Unforeseen domestic problems like death, divorce, illness and marriage	12	7	1	1	1	50
Financial problems	11	6	1	1	3	43
Misutilization of funds	11	7	2	1	1	48
More than one loan	11	7	1	1	2	46
Wrong identification of loanee	12	5	1	3	1	46
Inaccurate pre-sanction security and appraisal	13	6	1	1	1	51
Target oriented approach to lending by bank	13	4	1	1	3	45
Absence of credit information sharing among different financial institutions	12	5	1	2	2	45
Delay in disbursement facility	13	3	1	3	2	44
Weak monitoring	14	4	2	2	0	52
Inadequate law to take appropriate action	15	4	1	1	1	53
Lack of initiative on the part of bank employees	16	3	1	1	1	54
Absence of genuine guarantor	17	2	1	1	1	55
More dependent member and higher financial burden	15	3	1	1	2	50
Defaults are more in case of self-employed	13	5	1	1	2	48
Defaults are less in case of service holders	14	4	1	1	2	49
Defaults are less in case of women borrower	14	5	1	1	1	52
Chances of default are less in case of government employees	10	8	1	1	2	45
Chances of default are more in case of private sector employees	11	7	1	1	2	46

Source: Compiled from field survey

ANNEXURE-4 : PERCEPTION TOWARD PERSONAL LOAN(11)						
Variables	*Opinion of Urban female(age group between20-40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	6	2	1	1	1	22
Unforeseen domestic problems like death, divorce, illness and marriage	7	1	1	1	1	23
Financial problems	6	2	2	1	0	24
Misutilization of funds	6	2	1	0	2	21
More than one loan	8	1	1	1	0	27
Wrong identification of loanee	7	2	1	0	1	25
Inaccurate pre-sanction security and appraisal	7	2	1	1	0	26
Target oriented approach to lending by bank	5	3	1	1	1	21
Absence of credit information sharing among different financial institutions	5	4	1	0	1	23
Delay in disbursement facility	9	1	0	1	0	29
Weak monitoring	6	1	1	1	2	19
Inadequate law to take appropriate action	7	1	1	1	1	23
Lack of initiative on the part of bank employees	7	2	2	0	0	27
Absence of genuine guarantor	7	0	2	0	2	21
More dependent member and higher financial burden	7	1	1	2	0	24
Defaults are more in case of self-employed	5	5	0	0	1	24
Defaults are less in case of service holders	5	4	1	1	0	24
Defaults are less in case of women borrower	5	3	1	1	1	21
Chances of default are less in case of government employees	6	1	1	1	2	19
Chances of default are more in case of private sector employees	6	1	1	2	1	20

Source: Compiled from field survey

ANNEXURE-5: PERCEPTION TOWARD PERSONAL LOAN(19)						
Variables	*Opinion of Semi-urban male (age group between20-40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	10	5	1	1	2	39
Unforeseen domestic problems like death, divorce, illness and marriage	10	4	1	1	3	36
Financial problems	10	4	2	1	2	38
Misutilization of funds	10	5	1	1	2	39
More than one loan	11	5	1	1	1	43
Wrong identification of loanee	12	5	1	1	0	47
Inaccurate pre-sanction security and appraisal	12	4	1	2	0	45
Target oriented approach to lending by bank	12	4	1	1	1	44
Absence of credit information sharing among different financial institutions	12	3	2	1	1	43
Delay in disbursement facility	13	3	1	0	2	44
Weak monitoring	13	4	1	1	0	48
Inadequate law to take appropriate action	12	5	1	0	1	46
Lack of initiative on the part of bank employees	11	4	1	1	2	40
Absence of genuine guarantor	10	5	1	1	2	39
More dependent member and higher financial burden	11	5	1	1	1	43
Defaults are more in case of self-employed	13	4	1	1	0	48
Defaults are less in case of service holders	14	2	1	1	1	46
Defaults are less in case of women borrower	12	5	1	1	0	47
Chances of default are less in case of government employees	13	3	1	1	1	45
Chances of default are more in case of private sector employees	13	2	1	2	1	43

Source: Compiled from field survey

ANNEXURE-6: PERCEPTION TOWARD PERSONAL LOAN(14)						
Variables	*Opinion of Semi-urban-female (age group between20-40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	8	2	1	1	2	27
Unforeseen domestic problems like death, divorce, illness and marriage	8	3	1	1	1	30
Financial problems	8	4	1	1	0	33
Misutilization of funds	8	2	2	2	0	30
More than one loan	7	5	1	0	1	31
Wrong identification of loanee	7	2	2	2	1	26
Inaccurate pre-sanction security and appraisal	7	3	2	1	1	28
Target oriented approach to lending by bank	8	2	2	1	1	29
Absence of credit information sharing among different financial institutions	8	3	1	1	1	30
Delay in disbursement facility	8	1	2	1	2	26
Weak monitoring	9	1	1	1	2	28
Inadequate law to take appropriate action	9	2	1	1	1	31
Lack of initiative on the part of bank employees	9	3	1	0	1	33
Absence of genuine guarantor	8	4	1	1	0	33
More dependent member and higher financial burden	10	1	1	1	1	32
Defaults are more in case of self-employed	11	1	1	0	1	35
Defaults are less in case of service holders	10	2	1	1	0	35
Defaults are less in case of women borrower	10	1	1	2	0	33
Chances of default are less in case of government employees	12	1	0	0	1	37
Chances of default are more in case of private sector employees	9	1	1	1	2	28

Source: Compiled from field survey

ANNEXURE-7: PERCEPTION TOWARD PERSONAL LOAN(18)						
Variables	*Opinion of Rural male (age group more than 40 years*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	10	5	1	1	1	40
Unforeseen domestic problems like death, divorce, illness and marriage	11	4	1	1	1	41
Financial problems	9	5	1	1	2	36
Misutilization of funds	9	4	1	3	1	35
More than one loan	8	5	1	3	1	34
Wrong identification of loanee	7	6	2	2	1	34
Inaccurate pre-sanction security and appraisal	9	4	1	2	2	34
Target oriented approach to lending by bank	10	2	1	1	4	31
Absence of credit information sharing among different financial institutions	11	3	1	1	2	38
Delay in disbursement facility	13	3	1	1	0	46
Weak monitoring	12	4	1	0	1	44
Inadequate law to take appropriate action	11	5	1	1	0	44
Lack of initiative on the part of bank employees	11	4	1	1	1	41
Absence of genuine guarantor	10	5	1	1	1	40
More dependent member and higher financial burden	9	5	1	2	1	37
Defaults are more in case of self-employed	9	4	2	2	1	36
Defaults are less in case of service holders	8	5	2	1	2	34
Defaults are less in case of women borrower	10	4	2	2	0	40
Chances of default are less in case of government employees	11	5	1	0	1	43
Chances of default are more in case of private sector employees	10	5	1	1	1	40

Source: Compiled from field survey

ANNEXURE-8: PERCEPTION TOWARD PERSONAL LOAN(13)						
Variables	*Opinion of Rural female (age group of more than 40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	7	3	1	1	1	27
Unforeseen domestic problems like death, divorce, illness and marriage	7	2	2	1	1	26
Financial problems	7	2	1	1	2	24
Misutilization of funds	7	2	2	2	0	27
More than one loan	7	2	2	0	2	25
Wrong identification of loanee	8	4	1	0	0	33
Inaccurate pre-sanction security and appraisal	8	3	1	0	1	30
Target oriented approach to lending by bank	8	2	1	1	1	28
Absence of credit information sharing among different financial institutions	9	3	1	0	0	34
Delay in disbursement facility	6	4	1	1	1	26
Weak monitoring	5	5	1	1	1	25
Inadequate law to take appropriate action	6	3	1	1	2	23
Lack of initiative on the part of bank employees	6	3	2	1	1	25
Absence of genuine guarantor	6	3	1	2	1	24
More dependent member and higher financial burden	7	2	2	0	2	25
Defaults are more in case of self-employed	5	5	1	1	0	26
Defaults are less in case of service holders	9	1	1	1	1	29
Defaults are less in case of women borrower	8	1	1	1	2	25
Chances of default are less in case of government employees	8	2	1	1	1	28
Chances of default are more in case of private sector employees	8	3	1	1	0	31

Source: Compiled from field survey

ANNEXURE-9 : PERCEPTION TOWARD PERSONAL LOAN(15)						
Variables	*Opinion of Urban male (age group of more than 40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	9	3	1	1	1	33
Unforeseen domestic problems like death, divorce, illness and marriage	8	4	1	1	1	32
Financial problems	9	4	1	1	0	36
Misutilization of funds	8	3	1	1	2	29
More than one loan	8	4	1	2	0	33
Wrong identification of loanee	9	3	1	1	1	33
Inaccurate pre-sanction security and appraisal	9	3	1	2	0	34
Target oriented approach to lending by bank	8	4	1	1	1	32
Absence of credit information sharing among different financial institutions	10	4	1	0	0	39
Delay in disbursement facility	9	3	2	0	1	34
Weak monitoring	8	3	2	1	1	31
Inadequate law to take appropriate action	8	4	1	1	1	32
Lack of initiative on the part of bank employees	8	4	1	0	2	31
Absence of genuine guarantor	8	3	1	1	2	29
More dependent member and higher financial burden	9	4	1	1	0	36
Defaults are more in case of self-employed	9	3	1	1	1	33
Defaults are less in case of service holders	8	4	1	1	1	32
Defaults are less in case of women borrower	8	3	1	2	1	30
Chances of default are less in case of government employees	8	5	1	0	1	34
Chances of default are more in case of private sector employees	9	3	1	1	1	33

Source: Compiled from field survey

ANNEXURE-10: PERCEPTION TOWARD PERSONAL LOAN(10)						
Variables	*Opinion of Urban female (age group of more than 40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
Willful default	6	1	1	1	1	20
Unforeseen domestic problems like death, divorce, illness and marriage	5	1	1	1	2	16
Financial problems	6	2	1	1	0	23
Misutilization of funds	4	2	1	1	2	15
More than one loan	6	1	2	0	1	21
Wrong identification of loanee	6	2	2	0	0	24
Inaccurate pre-sanction security and appraisal	4	2	0	2	2	14
Target oriented approach to lending by bank	5	3	1	1	0	22
Absence of credit information sharing among different financial institutions	5	2	1	1	1	19
Delay in disbursement facility	5	1	1	1	2	16
Weak monitoring	5	2	1	2	0	20
Inadequate law to take appropriate action	5	3	1	0	1	21
Lack of initiative on the part of bank employees	5	2	1	1	1	19
Absence of genuine guarantor	5	1	1	2	1	17
More dependent member and higher financial burden	7	1	0	1	1	22
Defaults are more in case of self-employed	7	1	0	2	0	23
Defaults are less in case of service holders	6	4	2	0	0	24
Defaults are less in case of women borrower	6	1	1	1	1	20
Chances of default are less in case of government employees	5	1	1	2	1	17
Chances of default are more in case of private sector employees	5	3	1	1	0	22

Source: Compiled from field survey

ANNEXURE-11 : PERCEPTION TOWARD PERSONAL LOAN(16)						
Variables	*Opinion of Semi-urban male (age group of more than 40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	9	4	1	1	1	35
Unforeseen domestic problems like death, divorce, illness and marriage	9	3	2	1	1	34
Financial problems	8	4	1	2	1	32
Misutilization of funds	10	3	1	1	1	36
More than one loan	11	3	1	0	1	39
Wrong identification of loanee	10	2	1	1	2	33
Inaccurate pre-sanction security and appraisal	8	5	1	1	1	34
Target oriented approach to lending by bank	9	4	1	2	0	36
Absence of credit information sharing among different financial institutions	10	3	1	1	1	36
Delay in disbursement facility	10	4	1	0	1	38
Weak monitoring	10	3	2	1	0	38
Inadequate law to take appropriate action	11	3	1	0	1	39
Lack of initiative on the part of bank employees	9	4	1	1	1	35
Absence of genuine guarantor	8	5	1	1	1	34
More dependent member and higher financial burden	9	4	1	2	0	36
Defaults are more in case of self-employed	8	3	1	1	3	28
Defaults are less in case of service holders	11	2	1	1	1	37
Defaults are less in case of women borrower	12	1	1	1	1	38
Chances of default are less in case of government employees	13	1	1	0	1	41
Chances of default are more in case of private sector employees	9	6	0	1	0	39

Source: Compiled from field survey

ANNEXURE-12 : PERCEPTION TOWARD PERSONAL LOAN(11)						
Variables	*Opinion of Semi-urban female (age group of more than 40 years)*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	6	1	1	1	2	19
Unforeseen domestic problems like death, divorce, illness and marriage	6	2	1	1	1	22
Financial problems	5	3	1	1	1	21
Misutilization of funds	5	4	1	1	0	24
More than one loan	5	3	1	0	2	20
Wrong identification of loanee	6	1	1	1	2	19
Inaccurate pre-sanction security and appraisal	6	0	1	2	2	17
Target oriented approach to lending by bank	5	2	2	1	1	20
Absence of credit information sharing among different financial institutions	5	3	1	1	1	21
Delay in disbursement facility	5	4	1	1	0	24
Weak monitoring	6	3	1	0	1	24
Inadequate law to take appropriate action	6	2	1	1	1	22
Lack of initiative on the part of bank employees	7	3	1	0	0	28
Absence of genuine guarantor	7	2	1	1	0	26
More dependent member and higher financial burden	6	4	0	0	1	25
Defaults are more in case of self-employed	5	5	1	0	0	26
Defaults are less in case of service holders	6	2	2	1	0	24
Defaults are less in case of women borrower	6	1	2	1	1	21
Chances of default are less in case of government employees	6	1	1	1	2	19
Chances of default are more in case of private sector employees	6	2	1	1	1	22

Source: Compiled from field survey

ANNEXURE-13 : PERCEPTION TOWARD PERSONAL LOAN(14)						
Variables	*Opinion of Rural Bank officials*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	8	3	1	1	1	30
Unforeseen domestic problems like death, divorce, illness and marriage	7	4	1	1	1	29
Financial problems	8	2	1	1	2	27
Misutilization of funds	8	3	1	1	1	30
More than one loan	9	3	1	1	0	34
Wrong identification of loanee	7	4	1	1	1	29
Inaccurate pre-sanction security and appraisal	7	3	1	1	2	26
Target oriented approach to lending by bank	7	3	2	1	1	28
Absence of credit information sharing among different financial institutions	7	2	3	1	1	27
Delay in disbursement facility	8	1	1	1	3	24
Weak monitoring	8	2	2	1	1	29
Inadequate law to take appropriate action	8	3	1	1	1	30
Lack of initiative on the part of bank employees	8	2	1	1	2	27
Absence of genuine guarantor	8	3	1	2	0	31
More dependent member and higher financial burden	9	1	1	1	2	28
Defaults are more in case of self-employed	9	2	1	1	1	31
Defaults are less in case of service holders	9	3	1	0	1	33
Defaults are less in case of women borrower	10	2	1	1	0	35
Chances of default are less in case of government employees	9	2	2	0	1	32
Chances of default are more in case of private sector employees	8	2	2	1	1	29

Source: Compiled from field survey

ANNEXURE-14 : PERCEPTION TOWARD PERSONAL LOAN(12)						
Variables	*Opinion of Urban bank officials*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	7	2	1	1	1	25
Unforeseen domestic problems like death, divorce, illness and marriage	6	3	1	1	1	24
Financial problems	7	2	2	1	0	27
Misutilization of funds	6	3	1	2	0	25
More than one loan	7	2	0	1	2	23
Wrong identification of loanee	7	2	2	0	1	26
Inaccurate pre-sanction security and appraisal	6	3	0	1	2	22
Target oriented approach to lending by bank	6	3	1	2	0	25
Absence of credit information sharing among different financial institutions	5	4	1	1	1	23
Delay in disbursement facility	7	2	2	1	0	27
Weak monitoring	8	1	1	1	1	26
Inadequate law to take appropriate action	8	2	1	0	1	28
Lack of initiative on the part of bank employees	9	1	1	1	0	30
Absence of genuine guarantor	7	4	0	0	1	28
More dependent member and higher financial burden	6	4	1	1	0	27
Defaults are more in case of self-employed	6	3	1	1	1	24
Defaults are less in case of service holders	5	5	1	1	0	26
Defaults are less in case of women borrower	5	4	1	1	1	23
Chances of default are less in case of government employees	8	1	1	1	1	26
Chances of default are more in case of private sector employees	9	1	1	0	1	29

Source: Compiled from field survey

ANNEXURE-15 : PERCEPTION TOWARD PERSONAL LOAN(13)						
Variables	*Opinion of Semi-urban bank officials*					
	Strongly agree	*Agree*	*Neutral*	*Disagree*	*Strongly disagree*	*Score*
	3	*2*	*1*	*0*	*-1*	
Willful default	8	2	1	1	1	28
Unforeseen domestic problems like death, divorce, illness and marriage	7	3	1	1	1	27
Financial problems	7	2	1	1	2	24
Misutilization of funds	7	1	1	1	3	21
More than one loan	7	2	2	1	1	26
Wrong identification of loanee	7	3	1	1	1	27
Inaccurate pre-sanction security and appraisal	7	2	2	2	0	27
Target oriented approach to lending by bank	7	2	1	2	1	25
Absence of credit information sharing among different financial institutions	8	1	1	1	2	25
Delay in disbursement facility	9	1	1	1	1	29
Weak monitoring	8	2	1	1	1	28
Inadequate law to take appropriate action	7	4	1	0	1	29
Lack of initiative on the part of bank employees	8	1	1	1	2	25
Absence of genuine guarantor	8	2	1	1	1	28
More dependent member and higher financial burden	8	1	1	1	2	25
Defaults are more in case of self-employed	7	2	2	1	1	26
Defaults are less in case of service holders	8	3	1	1	0	31
Defaults are less in case of women borrower	9	2	1	0	1	31
Chances of default are less in case of government employees	10	1	1	1	0	33
Chances of default are more in case of private sector employees	10	1	0	1	1	31

Source: Compiled from field survey

MERGERS & ACQUISITIONS: AN EMPIRICAL STUDY ON THE SHORT-TERM POST- MERGER PERFORMANCE OF CORPORATE FIRMS IN INDIA

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ABSTRACT

*Mergers and acquisitions **(M&A)** become the major force in the changing environment. The policy of liberalization, decontrol and globalization of the economy has exposed the corporate sector to domestic and global competition. It is true that there is little scope for firms to learn from their past experience. Therefore, to determine the success of a merger, it is to be studied if there is financial gain from mergers. The present study is carried out with a sample of 20 firms listed in one of the leading Indian stock exchanges namely **Bombay Stock Exchange** out of 52 manufacturing firms which have undergone **M&A** in the same industry during 2007. It was aimed at to compare the liquidity performance of the sample acquirer firms using ratio analysis and t-test during the study period of three years before and after the period of mergers. Some measures of corporate performance such as **current ratio, quick ratio, working capital ratio, net profit ratio, operating profit ratio, return on investment ratio, net worth ratio, debtors turnover ratio, fixed assets turnover ratio, total assets turnover ratio, working capital turnover ratio, debt equity ratio, interest coverage ratio and total borrowing and equity to EBITD** are used. The study proves that merging firms which were merged with reputed and good management appear to have been financially benefitted in short run period in India.*

KEYWORDS
acquisition; business restructuring; business risk; corporate restructuring; merger.

JEL CLASSIFICATION
G34; L25; M40

INTRODUCTION
India has acquired the status of one of the biggest merger and acquisition (***M&A***) markets in the recent past. Indian corporate world is continuously engaged in strategic ***M&A*** deal growing at an annual rate of 28 per cent since 2002. India ranks eight in terms of the number and volume of ***M&A*** deals undertaken and it has to surpass markets like France, Italy and Germany. [1]Introduction of deregulatory policy measures in general and competition policies in particular since 1991 have resulted in a significant increase in the number of ***M&As*** in Indian corporate sector (e.g., Khanna, 1997; Venkiteswaran, 1997; Chandrasekhar, 1999; Roy, 1999; Basant, 2000; Beena, 2000, 2004 & 2008, Das, 2000; Kumar, 2000; Agarwal, 2002; Dasgupta, 2004; Mishra, 2005; Agarwal and Bhattacharya, 2006; Mantravadi and Reddy, 2008). While majority of these deals are horizontal in nature (Khanna, 1997; Beena 2000 & 2008; Mishra, 2005), the number vary significantly across the industries (Basant, 2000; Das, 2000; Dasgupta, 2004; Agarwal, 2002; Mishra, 2005). The broad industry groups that experienced a large number of ***M&A*** include financial and other services, chemicals including drugs and pharmaceuticals, electrical machinery, electronics and beverages including spirits and vinegars, etc. (Basant, 2000; Das, 2000; Agarwal, 2002, Mishra, 2005).

There are two broad theories explaining why firms acquire other firms or merge with other firm. The monopoly theory postulates that the firms use the route ***M&A*** to rise their market power (Steiner, 1975, Chatterjee, 1986), whereas, according to the efficiency theory, ***M&A*** are planned and executed to reduce costs by achieving scale economies (Porter, 1985; Shelton, 1988). Either way firms are expected to have better financial performance following ***M&A***. Many of the existing studies (Healy *et al*. 1992; Grabowski *et al*. 1995; Switzer, 1996; Waldfogel and Smart, 1994; Vander, 1996) empirically support the proposition that ***M&A*** lead to better financial performance of the firms. Contrary to this, there are also studies (Dickerson *et al*. 1997; Ravenscraft and Scherer, 1987a and 1987b; Mueller, 1985; Ghosh, 2001) that report results at odds with the view that ***M&A*** improve corporate performance. Further, Ikeda and Doi (1983), Cosh *et al.* (1984), Kumar (1984), Geroski (1988), Odagiri (1992) also found either negative results or little changes in operating performance following ***M&A***.

Thus, the existing literature report mixed impact of ***M&A*** on financial performance of the firms, with the findings ranging from slightly positive improvement to significantly negative or no improvement. This raises an important question; has the wave of ***M&A*** in the post-reform era helped Indian firms in improving their financial performance? While addressing this question it is very important to understand the implications of the wave of ***M&A***, the research on financial performance following ***M&A*** in India so far is very limited. Besides, most of these existing studies (Pawaskar, 2001; Beena, 2004; Mantravadi and Reddy, 2008) found decline or very little increase in post-merger profitability, their empirical testing is based on either small sample of deals (Pawaskar, 2001) or shorter time-frame (Beena, 2004).

M&A IN INDIA – A REVIEW
M&A[2] has played an important role in the transformation of the industrial sector in India since the World War I. Similarly, the economic and political environments during the Second World War and Post-War periods gave a tremendous impetus to a spate of ***M&A*** activities. The high inflationary situation during the war time paved the way for many Indian businessmen to accumulate income by way of high profits. Further, there was a craze to acquire control over industrial unites in spite of swollen pricing of shares. The other practices are acquiring shares (takeover) in the open market with a view to a acquire control over the management of well established and reputed firms. But, after gaining independence, British managing agency houses gradually liquidated their holdings at low prices offered by Indian business community. Further, at that time, it was a glamorous attitude of obtaining control over insurance firm for the purpose of utilizing the fund to acquire substantial holdings in other firms. The big industrialists also floated banks and investment firms for the objective of acquiring control over established firms.

During this period a large ***M&A*** deals occurred in *jute, cotton textile, sugar, insurance, banking, electricity and tea plantation industry*. A number of government regulations came in the way of ***M&A***, which include Industrial Development and Regulations Act, 1951, Import Control Order, 1957-58, Monopoly and Restrictive

Trade Practice Act, 1969 and Foreign Exchange Regulation Act, 1973. These, however, did not deter the Indian corporate enterprises from indulging in ***M&A*** deals. Most of the ***M&A*** was in the nature of government induced ***M&A*** deals. For instance, ***M&A*** cover was given by the government to take over sick industrial units; the formation of the Life Insurance Corporation (LIC) and nationalization of Life Insurance business in 1956 resulted in the takeover of as many as 243 insurance firms. The National Textiles Corporation (NTC) also took over a large number of sick textile units. In the sixties a number of ***M&A*** occurred in the Indian Banking industry. In 1961 Bank of Baghelkhand merged with State Bank of India; in 1962 Bhor State Bank Ltd with SBI, in 1963 State Bank of Jaipure with SBI; and in 1964 Coimbatore Varthaka Vridhi Bank Ltd merged with Srinivasperumal Bank Ltd. But, after the nationalization of 14 commercial banks in July 1969, ***M&A*** came down to a large extent in Indian Banking industry. However, in the post-liberalization era, there has been a total transformation in the Indian corporate world as brought about by the ***M&A*** wave. Several measures were initiated by the government after liberalization, which include deli censing, diversification, MRTP Act relaxations, liberalization of policy towards foreign capital and technology, etc. This Industrial transformation provided the much needed thrust to allow the Indian corporate to embark on the path of growth and diversification through ***M&A.*** During this period the heads of corporate groups like R.P. Goenka (RPG), Vijay Mallaya (UB) and Manu Chabria had employed ***M&A*** strategy aggressively to grow. Other groups whose growth has been significantly contributed by ***M&A*** included Hindustan Lever, Ranbaxy, Glaxo India and Sun Pharmaceuticals Limited.

REVIEW OF LITERATURE

Harris. J. and Ozcan (2000)[3] examined the impact of horizontal mergers of US hospital's technical efficiency before and after merger, the findings of the study revealed that mergers do increase a hospital's level of efficiency constant returns-to-scale model indicated an overall reduction in input utilization after merger, compared to variable returns-to-scale model. **Sydney and Jerayr (2002)**[4] found positive and negative transfer effects in the organizations' acquisition; acquirer-to-target similarity was positively and significantly associated with acquisition performance. **Dash (2004)**[5] examined the economic consequences of mergers on the shareholders of the acquirer firms. The event study methodology which was employed to assess the extent of value creation by mergers indicates that on an average mergers lead to value destruction, irrespective of their pattern over a long period of time and the destruction is relatively greater in case of unrelated mergers. **Moeller and Sehlingemam (2005)**[6] analyzed the performance of acquirer firms through two major merger waves that occurred during that period. They found that even when the target shareholder benefits were taken into account the net impacts were still negative $134 billion. **Jarrod McDonald, Max Coulthard, and Paul de Lange (2005)**[7] used semi-structured interviews to: identify the relation between corporate strategic planning and ***M&A*** strategy; examined the due diligence process in screening a merger or acquisition; and evaluated previous experience in successful ***M&As***. The study found that there was a clear alignment between corporate and ***M&A*** strategic objectives but that each organization had a different emphasis on individual criterion. Due diligence was also critical to success; its particular value was removing managerial ego and justifying the business case. Finally, there was mixed evidence on the value of experience, with improved results from using a flexible framework of assessment.

David (2006)[8] analyzed the prices paid by foreign firms for acquisitions in the United States ***(US)*** relative to the price paid by US firms for mergers. The findings indicate that foreign firms do pay more for US acquisitions, and that this does result in significantly lower returns on ***M&As*** investment in the US by foreign firms. **Vanitha. S., and M. Selvam (2007)**[9] analyzed to compare the financial performance of the pre and post – merger, and found that in India merging firms were taken over by firms with reputed and good management. **Pramod Mantravadi, and Vidyadhar Reddy. A. (2008)**[10] analyzed the impact of mergers on the operating performance of acquiring corporate in different industries, and found that there are minor variations in terms of impact on operating performance following merger, in different industries in India. In particular, mergers seem to have had a slightly positive impact on profitability of firms in the banking and finance industry, the pharmaceuticals, textiles and electrical equipment sectors saw a marginal negative impact on operating performance (in terms of profitability and returns on investment (***ROI***)). For the Chemicals and Agri-products sectors, mergers had caused a significant decline, both in terms of profitability margins and ***ROI*** on assets. **Isabel Feito-Ruiz (2010)**[11] analyzed family versus nonfamily firm returns under different legal environments when a ***M&A*** is announced. The findings show that family ownership has a significant positive influence on acquirer shareholder ***M&A*** valuation. However, a major shareholder ownership of 32% has a negative impact. **Indhumathi (2011)**[12] analyzed to compare the performance of the acquirer and target corporate firms before and after the period of mergers by using ratio analysis and t-test during the study period. The study found that the acquirer corporate firms increased their financial performance after the merger event.

STATEMENT OF THE PROBLEMS AND SCOPE OF THE STUDY

When the firm gets merged with other or acquired by the profit making firm, it benefits for both the firms, hence now-a-days all firms are interested in resorting to corporate restructuring in the form of ***M&A***. However, the question often arises whether all the firms that are merged / acquired are ending up with maximization of shareholders' wealth and improved operating performance? In some firms, the shareholders' wealth gets reduced after it get merged / acquired. Hence, the present study is proposed to seek answers to the stated question by analyzing the impact of ***M&A*** on the firms' performance of selected corporate firms in Indian corporate considering *three years period before and three years period after* the process of ***M&A.*** The period of the study is from 2004 to 2010. i.e., pre merger period from 2004-2006; post merger period from 2008-2010.

RESEARCH METHODOLOGY AND SAMPLING

The study used secondary sources of data. The required data for the study were collected from the capital market database called ***Centre for Monitoring Indian Economy Private Limited (Prowess CMIE).*** The sample units (firms) drawn are based on the list of firms that ventured into the ***M&As*** process with the help of the comprehensive list provided by the Third Annual Issue 2007 © Grant Thornton India 2008.

OBJECTIVES OF THE STUDY AND HYPOTHESES DEVELOPMENT

The study is primarily designed to examine the impact of relevant benefits expected by the Indian manufacturing firms after ***M&A***, thereby tries to measure the operating performance of selected sample corporate firms in India. More specifically, the present study is proposed to:

- study the impact of ***M&A*** on liquidity, profitability, operating performance and leverage of firms across industries in India after ***M&A***.

Based on the objectives the following hypotheses are developed:

Ho#1-There is no significant improvement on the liquidity of acquirer firms across industries in India after ***M&A.***

Ho#2- There is no significant improvement on the profitability of acquirer firms across industries in India after ***M&A.***

Ho#3- There is no significant improvement on the operating performance of acquirer firms across industries in India after ***M&A.***

Ho#4- There is no significant decline in financial risks of acquirer firms across industries in India after ***M&A.***

ANALYSIS, RESULTS AND DISCUSSION

PLAN OF ANALYSIS

To study the impact of ***M&A*** on the overall performance of acquirer firms, the analysis has been made focusing on four elements viz *liquidity, profitability, operating performance and financial risks*. Appropriate ratios viz., **current ratio, quick ratio, working capital ratio, net profit ratio, operating profit ratio, return on investment ratio, net worth ratio, debtors turnover ratio, fixed assets turnover ratio, total assets turnover ratio, working capital turnover ratio, debt equity ratio, interest coverage ratio and total borrowing and equity to EBITD** are used to measure the impact of ***M&A*** on the specific element. To measure the impact of ***M&A*** on various dimensions (elements) parametric statistical tool, viz., t test has been extensively used by use of the following formula.

Paired t test for difference of two means is

$$t = \frac{|\bar{d}|}{S/\sqrt{n}} \sim t_{n-1}\, dt$$

Where $\bar{d} = \Sigma d/n$ and $d = x - y$ or $y - x$

$$S = \sqrt{\frac{\Sigma (d - \bar{d})^2}{n - 1}}$$

TABLE 1: LIST OF DEALS ANNOUNCED DURING THE CALENDAR YEAR 2007

Sl.No.	Acquirer Firms	Target Firms	Sector
1.	3i Infotech ltd	SDG Software Technologies Ltd	IT & ITeS
2.	Aftek ltd	C2Silicon software solutions pvt ltd	IT & ITeS
3.	Aurobindo pharma ltd	APL Life Sciences ltd	Pharma, health& biotech
4.	Consolidated finvest and holdings	Rishi trading firm	Banking & fin. services
5.	Coromandel fertilisers ltd	Godavari fertilisers and chemicals ltd	Agri. & agro products
6.	Dabur India ltd (DIL)	Dabur foods ltd (DFL)	FMCG, food &beverages
7.	Datamatics technologies Ltd	Datamatics ltd	IT & ITeS
8.	Emami	J B marketing finance	Banking & fin. services
9.	Excel crop care ltd	Business units of excel industries ltd	Plastic & chemicals
10.	Hindalco industries ltd	indian aluminum firm ltd (indal)	Aluminum
11.	Indian oil corporation	IBP's petroleum retail business	Oil& gas
12.	Phoenix mills ltd	Ashok Ruia Enterprisespvt ltd	Others
13.	Reliance Industry Ltd	Indian Petrochemicals Corpn. Ltd.	Oil& gas
14.	Regency ceramics ltd	Regma ceramics ltd	Others
15.	SB&T international	Mimansa jewellery	Others
16.	Satyam computer services ltd	Nipuna	IT & ITeS
17.	State bank of India (SBI)	State Bank of Saurashtra	Banking & fin. services
18.	Texmaco ltd	Shree export house ltd	Power &energy
19.	TV today network ltd	Radio today broadcasting ltd	Media, ent, & publishing
20.	VIP industries	Aristocrat luggage ltd	FMCG, food &beverages

Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

ANALYSIS AND RESULTS

The performance of the selected acquirer firms in respect of their liquidity, operating performance, profitability and leverage after merger has been compared to that of the before merger using t-test and the results of the analysis are presented from *tables 1 to 14*. *Table 1* shows the list of deals announced for ***M&A*** during the calendar year 2007.

TABLE 2: IMPACT OF MERGER ON CURRENT RATIO OF ACQUIRER FIRMS

Sl.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	2.21	.89	2.23	+	.49	-.02	.98
2.	Aftek Ltd.	13.88	4.19	11.84	-	4.16	.46	.69
3.	Aurobindo Pharma	1.40	.06	1.46	+	.21	-.56	.63
4.	Consolidated Finvest	2.11	.74	6.07	+	6.29	-1.11	.38
5.	Coromandel Fer.	1.43	.02	1.40	-	.26	.21	.84
6.	Dabur India Ltd.	.90	.08	.96	+	.05	-1.78	.21
7.	Datamatics Tech.	2.79	.98	2.89	+	.60	-.11	.91
8.	Emami Ltd.	4.34	2.09	1.69	-	.64	2.43	.13
9.	Excel Crop Care Ltd.	1.21	.01	1.24	+	.05	-.76	.52
10.	Hindalco Industries	1.82	.23	1.08	-	.07	6.25	.02**
11.	Indian Oil Corpn.	1.38	.02	1.15	-	.16	2.17	.16
12.	Phoenix Mills Ltd.	2.77	2.23	1.49	-	.96	.74	.53
13.	Reliance Industries	1.20	.11	1.81	+	.21	-8.80	.01**
14.	Regency Ceramics Ltd	1.44	.20	.68	-	.22	6.10	.02**
15.	S B & T International	4.64	1.34	2.29	-	.32	3.92	.05*
16.	Satyam Computer Ser	7.00	.83	2.17	-	2.25	4.31	.05*
17.	State Bank Of India	1.56	.24	1.46	-	.11	.81	.50
18.	Texmaco Ltd.	1.86	.34	1.46	-	.16	1.42	.29
19.	TV Today	.79	.03	1.27	+	.24	-3.30	.08*
20.	V I P Industries Ltd.	1.22	.18	1.25	+	.09	-.18	.87

*Source: Complied & Edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

A. IMPACT OF MERGER ON LIQUIDITY OF ACQUIRER FIRMS

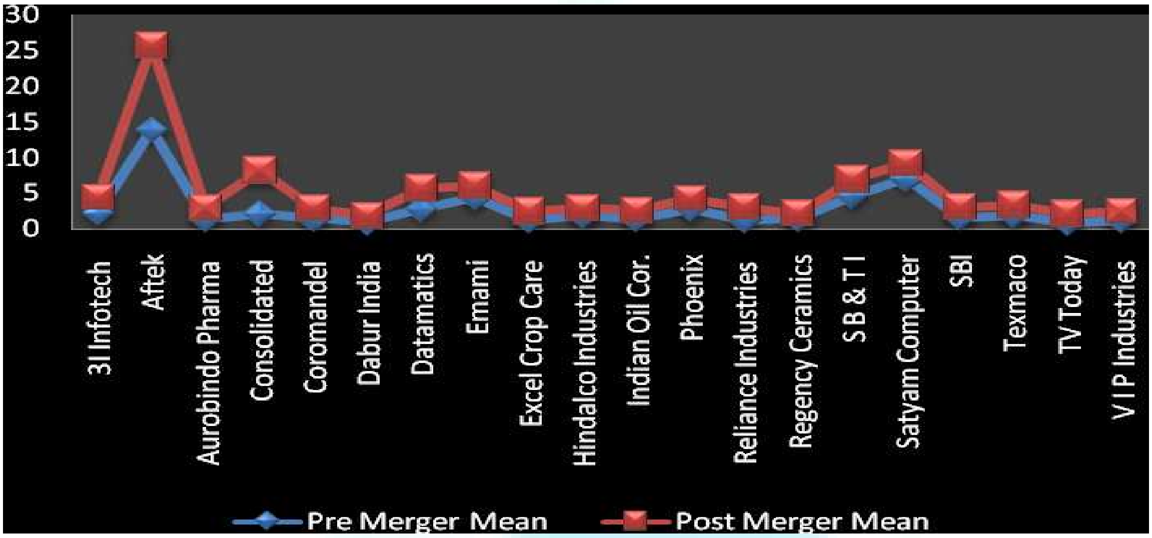
The liquidity ratios used for studying the impact of merger are current ratio **(*CR*),** quick ratio (***QR***) and working capital ratio (***WCR***).

I. Current Ratio: The current ratio ***(CR)*** is the most commonly used ratio for measuring liquidity position of firms of manufacturing sector, which is also called '*working capital ratio'*. It expresses the relationship between *current assets* and *current liabilities*.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table 2 reports the mean ***CRs*** before and after merger of the selected acquirer firms. The average ***CR*** varies between minimum of 0.79 (TV Today) and maximum of 13.88 (Aftek Ltd.) in the pre-merger period. The average ***CR*** ranges from 0 .68 (Regency Ceramics Ltd) to 11.84 (Aftek Ltd.) in the post-merger period. The mean ***CRs*** in post-merger period are more than that of the pre-merger period for nine out of 20 acquirer firms. For the other 11 acquirer firms, the ***CR*** has declined during the post-merger period. From p-values, it is inferred that the ***CR*** position of Reliance Industry (t = -8.80, P < 0.01), Regency Ceramics Ltd (t = 6.10, P< 0.05), Hindalco Industries (t = 6.25, P< 0.05) S B & T International (t = 3.92, P< 0.10), Satyam Computer (t=81, P< 0.10) and TV Today (t= -3.30, P<.10) increased significantly after ***M&A*** process. Overall, it is found from the comparison of ***CRs*** between pre and post merger periods that the liquidity position in terms of ***CR*** has improved for six out of 20 firms after merger. Though 14 firms have experienced with decline in ***CR*** position after merger, the decline has been significant for just three firms only. On the whole, it is inferred that ***M&A*** process has remarkable impact on ***CR*** of acquirer firms in India.

CHART A: IMPACT OF MERGER ON CURRENT RATIO OF ACQUIRER FIRMS

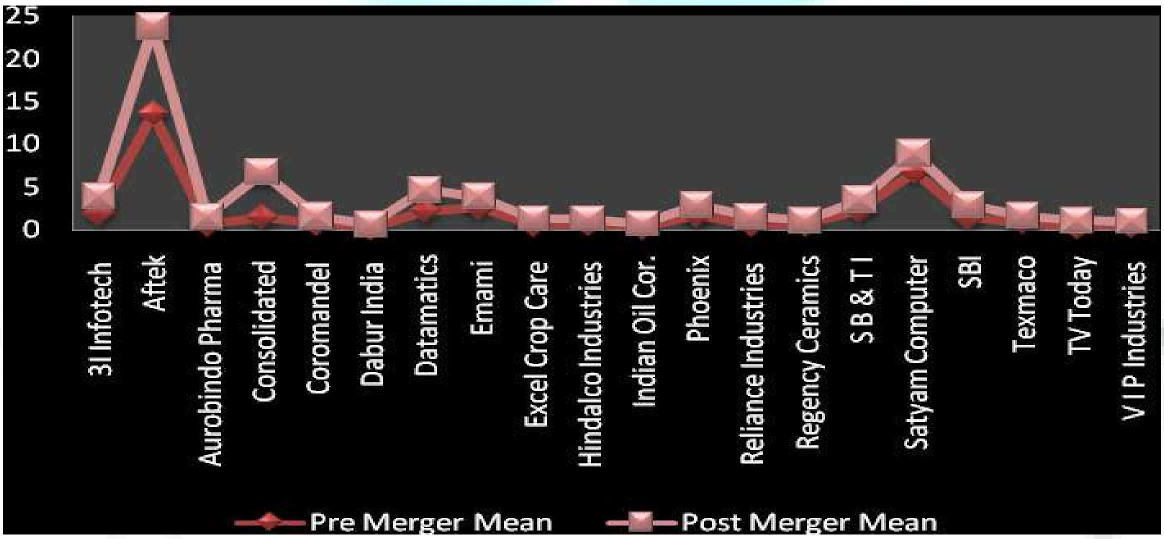


Source: Complied & Edited from the financial statements of selected firms listed-CMIE-prowess package.

II. Quick Ratio: The *quick ratio* is also known as *liquid ratio, acid test ratio* or *near money ratio*, which is the relationship between quick or liquid assets and quick liabilities.

$$\text{Quick Ratio} = \frac{\text{Quick (or) Liquid Assets}}{\text{Liquid Liabilities}}$$

CHART B: IMPACT OF MERGER ON QUICK RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

TABLE 3: IMPACT OF MERGER ON QUICK RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger		t-value		p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	2.03	.91	1.89	-	.47	.17	.876
2.	Aftek Ltd.	13.63	4.18	10.11	-	3.08	.89	.466
3.	Aurobindo Pharma	.72	.08	.76	+	.15	-.32	.776
4.	Consolidated Finvest	1.50	.69	5.20	+	6.29	-1.00	.420
5.	Coromandel Fert.	.83	.05	.75	-	.08	.99	.424
6.	Dabur India Ltd.	.30	.05	.34	+	.01	-1.24	.339
7.	Datamatics Tech.	2.29	.95	2.34	+	.44	-.12	.915
8.	Emami Ltd.	2.76	1.40	1.10	-	.40	1.94	.191
9.	Excel Crop Care Ltd.	.66	.04	.64	-	.03	.76	.524
10.	Hindalco Industries Lt	.76	.13	.55	-	.03	2.12	.167
11.	Indian Oil Corpn. Ltd.	.37	.07	.34	-	.03	.65	.580
12.	Phoenix Mills Ltd.	1.75	1.64	1.12	-	.87	.47	.680
13.	Reliance Industries	.61	.12	.90	+	.23	-4.07	.055*
14.	Regency Ceramics	.71	.18	.33	-	.18	1.80	.213
15.	S B & T International	2.36	.84	1.18	-	.13	2.52	.128
16.	Satyam Computer Ser	6.87	.82	2.06	-	2.21	4.39	.048**
17.	State Bank Of India	1.49	.23	1.41	-	.11	.69	.561
18.	Texmaco Ltd.	.93	.36	.68	-	.05	1.08	.391
19.	TV Today	.36	.03	.74	+	.18	-4.15	.053*
20.	V I P Industries Ltd.	.51	.24	.50	-	.07	.07	.949

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

Quick ratio (***QR)*** is increased after merger for six out of 20 firms (*see table 3*), Only in the case of Reliance Industries, Satyam Computer and TV Today, there has been a increase in the ***QR*** after merger with t value = -4.07, P < 0.10; 4.39, P< 0.10 and -4.15, P< 0.10 respectively, which are significant for three acquirer firms. Hence, it is inferred that there has been a significant increase in ***QR*** of three acquirer firms after merger.

III. Net Working Capital Ratio (*NWCR*): The net working capital refers to the difference between current assets and current liabilities. There is always a time gap between the receipt of cash and repayment of loan; hence working capital is required for the intervening period in order to sustain the activities.

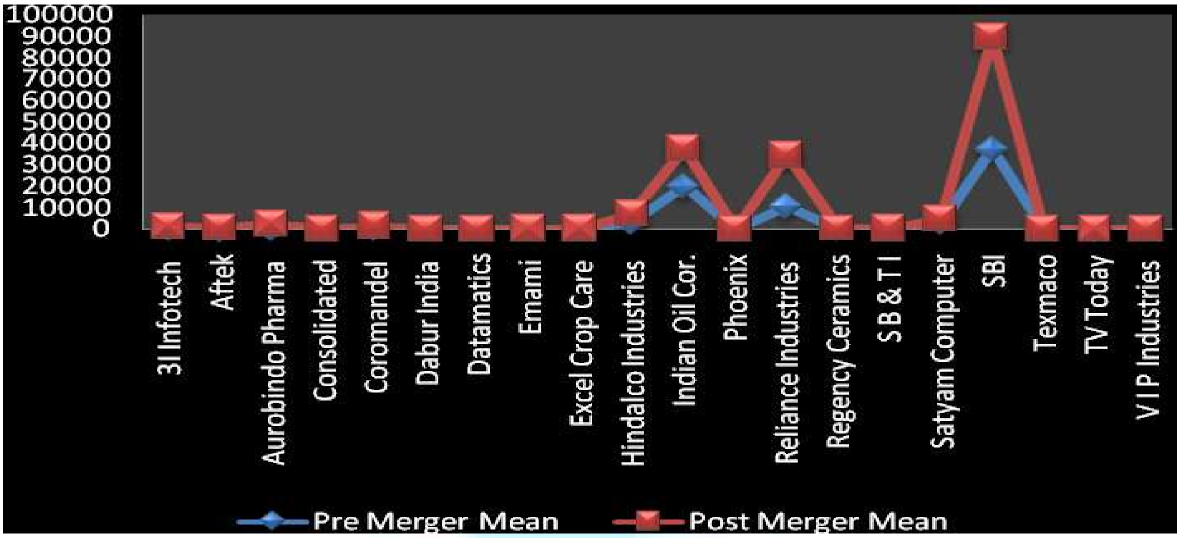
Net Working Capital = Current Assets – Current Liabilities

TABLE 4: IMPACT OF MERGERS ON NETWORKING CAPITAL RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech	205.79	165.74	853.51	+	129.63	-6.52	.023**
2.	Aftek Ltd.	301.86	113.61	396.59	+	25.54	-1.28	.329
3.	Aurobindo	884.24	172.86	1669.28	+	130.36	-6.14	.026**
4.	Consolidate	57.72	80.08	31.16	-	37.91	.43	.707
5.	Coromandel	351.34	141.03	1120.29	+	406.40	-2.81	.106
6.	Dabur India	121.05	185.74	117.63	-	73.41	.02	.984
7.	Datamatics	43.70	5.13	77.35	+	26.20	-2.40	.138
8.	Emami Ltd.	86.70	9.83	172.61	+	102.90	-1.44	.284
9.	Excel Crop	131.39	38.82	198.51	+	31.32	-1.67	.236
10.	Hindalco	3190.35	969.51	4038.43	+	1049.21	-4.53	.045**
11.	Indian Oil	19866.66	12372.18	17897.40	-	5913.73	.39	.734
12.	Phoenix	3.42	31.76	42.07	+	148.16	-.40	.726
13.	Reliance	10793.74	6726.59	23666.09	+	3415.86	-3.55	.071*
14.	Regency	62.35	5.14	380.50	+	48.93	-10.28	.009***
15.	S B & T Int	124.90	8.58	178.14	+	25.39	-3.67	.067*
16.	Satyam	3102.39	670.55	1707.93	-	3879.21	.56	.627
17.	SBI	37228.46	32973.26	52569.24	+	9933.91	-.78	.515
18.	Texmaco	63.91	50.35	73.84	+	87.14	-.12	.911
19.	TV Today	11.30	35.57	48.66	+	42.16	-1.71	.229
20.	V I P Indu	73.88	36.15	150.42	+	2.76	-3.86	.061*

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

CHART C: IMPACT OF MERGER ON NETWORKING CAPITAL RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

The working capital ratio (***WCR***) is increased after merger for 18 out of 20 firms (*see table 4*), however, the increase in ***WCR*** is statistically significant for three firms only at 10 per cent level; (Reliance Industries, S B & T Internatio and VIP Industries Ltd with t value = -3.55, P < 0.10; -3.67, P< 0.10 and -3.86, P< 0.10 respectively; for three firms at 5 per cent level (3I Infotech Ltd., Aurobindo Pharma and Hindalco Industries with t value = -6.52, P< 0.05; -3.67, P< 0.05 and -3.86, P< 0.05 respectively and for Regency at one per cent level (t value = -10.28, P< 0.01). Hence, it is inferred that there has been a significant increase in ***WCR*** of seven acquirer firms after merger.

B. IMPACT OF MERGER ON PROFITABILITY OF ACQUIRER FIRMS

To measure the impact of ***M&A*** on the profitability, i.e. to what extent the profitability of the acquirer firms was affected due to their ***M&As*** activities an attempt has been made by comparing mean profitability between pre and post merger periods using t-test. The profitability measures considered for the analysis are: net profit ratio **(*NPR*),** operating profit ratio **(*OPR*),** return on investment ratio **(*ROIR*)** and net worth ratio **(*NWR*).**

IV. Net Profit Ratio (*NPR*): Net profit ratio establishes a relationship between net profit (after tax) and income. It indicates overall efficiency of the firms of manufacturing sector. If the profit is not sufficient, the firm will not be able to achieve satisfactory ***ROI***.

$$\text{Net Profit (NP)} = \frac{\text{EBIT}}{\text{Income}}$$

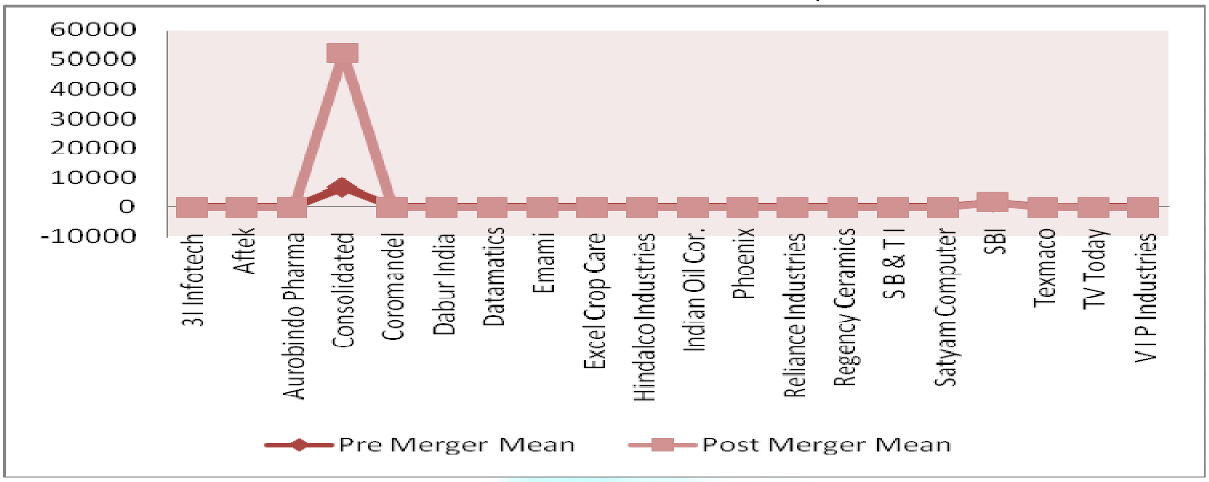
TABLE 5: IMPACT OF MERGER ON NET PROFIT RATIO OF ACQUIRER FIRMS

Sl. No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	6.58	10.25	9.78	+	7.39	-.33	.768
2.	Aftek Ltd.	31.72	1.95	3.34	-	9.29	5.71	.029**
3.	Aurobindo Pharma	3.43	3.83	9.29	+	6.12	-2.15	.164
4.	Consolidated Finvest	6841.74	12387.97	45344.44	+	5047.14	-4.20	.052*
5.	Coromandel Ferti.	4.15	.57	6.18	+	.95	-4.56	.045**
6.	Dabur India Ltd.	9.88	1.56	14.05	+	.51	-5.71	.029**
7.	Datamatics Tech.	19.40	6.50	7.99	-	1.46	2.50	.129
8.	Emami Ltd.	12.87	3.14	10.83	-	4.40	.46	.687
9.	Excel Crop Care Ltd.	4.41	1.11	4.94	+	.62	-.96	.438
10.	Hindalco Industries	11.64	.45	3.78	-	3.23	4.37	.048**
11.	Indian Oil Corpn.	4.11	1.57	2.66	-	1.67	1.05	.402
12.	Phoenix Mills Ltd	27.20	3.53	59.57	+	15.10	-3.68	.066*
13.	Reliance Industries	9.67	.74	11.60	+	2.02	-1.20	.351
14.	Regency Ceramics	22.54	.66	-4.02	-	17.37	2.74	.111
15.	S B & T International	2.27	2.14	.68	-	1.46	.76	.523
16.	Satyam Computer	21.67	1.99	-24.94	-	59.53	1.37	.304
17.	State Bank Of India	1620.00	1561.13	61.00	-	89.35	1.83	.208
18.	Texmaco Ltd.	8.26	4.65	8.48	+	1.11	-.06	.952
19.	TV Today	6.39	7.72	2.92	-	.35	.78	.513
20.	V I P Industries Ltd.	1.56	.53	2.81	+	4.84	-.44	.702

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

The net profit ratio (***NPR)*** is increased after merger for 10 out of 20 firms (*see table 5*). However, the increase in ***NPR*** is significant a positive for six firms only (Consolidated Finvest and Phoenix Mills at 10 per cent level with t value = -4.20, P< 0.10 and -3.68, P< 0.10 respectively); at five per cent level for four firms, (Aftek Ltd., Coromandel Ferti., Dabur India Ltd. and Hindalco Industries with t value = 5.71, P< 0.05; -4.56, P< 0.05; -5.71, P< 0.05 and 4.37, P< 0.05 respectively). Hence, it is inferred that there has been a significant increase in ***NPR*** of six acquirer firms after merger.

CHART D: IMPACT OF MERGER ON NET PROFIT RATIO OF ACQUIRER FIRMS

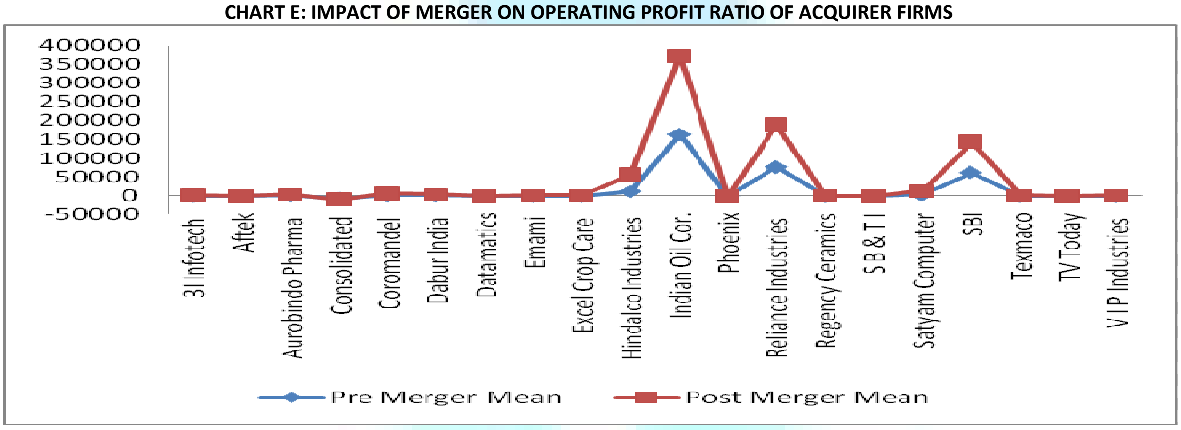


Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

V. Operating Profit Ratio (*OPR*): The operating profit or loss is made by a manufacturing sector from its business activities in a given period. This is further reduced or augmented by adding the business overheads and any ancillary investments to arrive at the profit (loss) before interest and tax (PBIT). The net operating income includes net interest income and non-interest income and non- interest expenses.

$$\text{Operating Profit Ratio} = \frac{\text{Profit}}{\text{Income}}$$

CHART E: IMPACT OF MERGER ON OPERATING PROFIT RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

TABLE 6: IMPACT OF MERGER ON OPERATING PROFIT RATIO OF ACQUIRER FIRMS

Sl. No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	345.69	42.19	1801.22	+	1036.32	-2.49	.130
2.	Aftek Ltd.	189.79	24.09	418.27	+	312.76	-1.37	.304
3.	Aurobindo Phar	1614.63	113.33	2165.81	+	1599.04	-.57	.626
4.	Consolidated Fin	-7657.21	13553.01	-2300.76	+	4086.11	-.57	.622
5.	Coromandel Ferti.	1588.38	291.81	4808.59	+	4929.97	-1.11	.381
6.	Dabur India Ltd.	1589.86	244.62	1884.58	+	1449.46	-.30	.787
7.	Datamatics Tech.	119.28	66.87	203.66	+	146.94	-1.80	.213
8.	Emami Ltd.	223.37	9.41	535.12	+	365.99	-1.51	.269
9.	Excel Crop Care	393.23	64.96	475.45	+	370.86	-.42	.711
10.	Hindalco Industr	11923.55	2007.71	45337.08	+	36408.37	-1.52	.268
11.	Indian Oil Corpn	163494.39	29666.78	208602.08	+	1.52	-.43	.706
12.	Phoenix Mill Ltd	15.00	57.18	115.75	+	60.59	-9.05	.012**
13.	Reliance Industr	76813.95	17432.28	112885.11	+	81830.43	-.64	.584
14.	Regency Ceramic	91.80	53.61	619.36	+	327.75	-3.27	.082*
15.	S B & T Internat	132.85	82.05	165.75	+	129.17	-1.20	.350
16.	Satyam Comput	3965.76	1223.68	8688.03	+	7955.26	-.93	.450
17.	State Bank Of	61987.49	1735.35	81776.20	+	58466.67	-.57	.625
18.	Texmaco Ltd.	234.19	92.99	691.68	+	488.18	-1.40	.295
19.	TV Today	99.75	65.77	546.33	+	409.79	-2.03	.179
20.	V I P Industries	306.49	40.56	416.03	+	308.18	-.69	.557

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

The operating profit ratio (***OPR***) is increased for all the 20 firms after merger (*see table 6*). However, the increase in ***OPR*** is significant only for two firms only viz., Phoenix Mill Ltd and Regency Ceramic with t value -9.05, P< 0.05 and -3.27, P< 0.10 at five per cent level and 10 per cent level respectively. Hence, it is inferred that there has been a significant increase in ***OPR*** of two acquirer firms only after merger.

VI. Returns on Investment Ratio (*ROIR*): This ratio is one of the most significant ratios used for measuring the overall efficiency of firms of manufacturing sector. As the primary objective of a manufacturing sector is to maximize its earnings, this ratio indicates the extent to which the primary objective of manufacturing sector is being achieved. This ratio is of great importance to the present and prospective shareholders as well as the management of the manufacturing sector, which reveals how well the resources of a manufacturing sector are being used. "The thumb rule is higher the ratio, better the results". The investment is compared with the returns and net investment refers to ***ROA***.

$$\text{Returns on Investment (ROI)} = \frac{\text{EBIT}}{\text{Net Investment}}$$

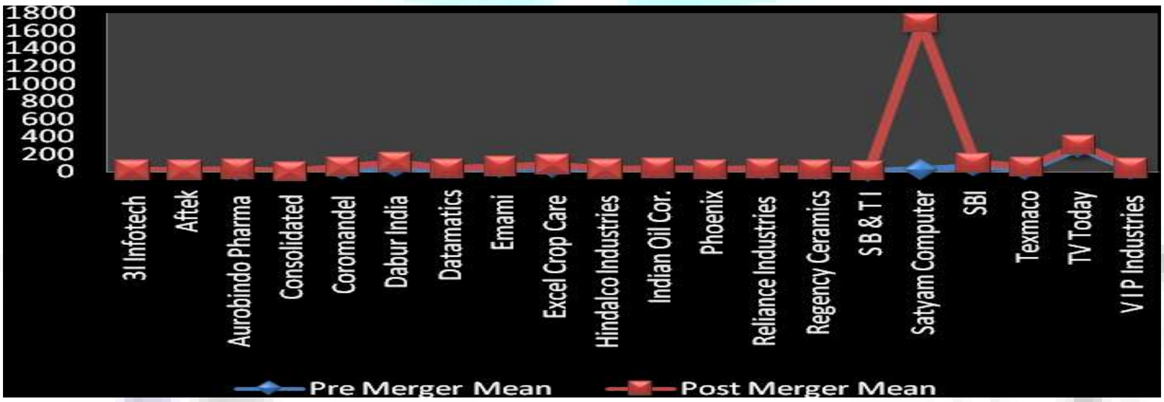
TABLE 7: IMPACT OF MERGER ON RETURN ON INVESTMENT RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	6.56	6.04	10.67	+	3.92	-.81	.499
2.	Aftek Ltd.	14.21	2.14	3.43	-	5.34	5.69	.030**
3.	Aurobindo Pharma	10.57	6.26	17.58	+	10.67	-1.11	.381
4.	Consolidated Finv	2.13	2.31	2.22	+	.33	-.06	.953
5.	Coromandel Ferti	19.70	2.36	33.55	+	8.67	-3.77	.064*
6.	Dabur India Ltd	44.82	5.17	61.68	+	4.51	-4.09	.055*
7.	Datamatics Tech.	23.62	16.82	10.57	-	3.56	1.12	.379
8.	Emami Ltd.	36.11	6.99	22.77	-	4.08	2.23	.155
9.	Excel Crop Care	41.08	7.51	40.53	-	4.34	.14	.897
10.	Hindalco Industries	16.51	1.21	10.36	-	7.52	1.22	.347
11.	Indian Oil Corpn.	22.45	8.51	16.89	-	5.41	1.26	.335
12.	Phoenix Mills Ltd.	21.01	2.51	4.37	-	.61	10.25	.009***
13.	Reliance Industries	17.51	1.52	15.51	-	4.10	.61	.599
14.	Regency Ceramics	19.70	12.47	3.43	-	4.55	3.53	.072*
15.	S B & T Internation	5.44	3.38	5.10	-	2.27	.11	.922
16.	Satyam Computer	26.73	3.83	1661.59	+	2859.10	-.99	.427
17.	State Bank Of India	56.56	11.96	43.84	-	2.15	1.67	.237
18.	Texmaco Ltd.	19.82	4.12	35.19	+	7.65	-2.72	.112
19.	TV Today	274.95	121.63	27.74	-	2.81	3.56	.070*
20.	V I P Industries Ltd.	14.62	.41	24.21	+	22.20	-.75	.531

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

The return on investment ratio (***ROIR)*** is increased after merger in eight out of 20 firms (*see table 7)*. For the other firms, there is a decrease in the mean ***ROIR.*** The increase in ***ROIR*** is significant for four firms only (Coromandel Ferti, Dabur India Ltd, Regency Ceramics and TV Today with t value = -3.77, P< 0.10; -4.09, P< 0.10; 3.53, P< 0.10 and 3.56, P< 0.10 respectively). The decrease in ***ROIR*** is significant with t value = 5.69, P< 0.05 for Aftek Ltd. For Phoenix Mills Ltd. the decrease in ***ROIR*** is significant with t value = 10.25, P< 0.01. Among the firms with increase in ***ROIR,*** it has been statistically significant for two acquirer firms only. Hence, it is inferred that there has been a significant increase in ***ROIR*** of two acquirer firms after merger.

CHART F: IMPACT OF MERGER ON RETURN ON INVESTMENT RATIO OF ACQUIRER FIRMS



VII. Net worth Ratio (*NWR*): The term 'net worth' refers to the total share capital and reserves or the difference between the total assets and external liabilities. This is one of the most important ratios used for measuring the overall efficiency of the firm. The thumb rule is *greater amount of net worth is good for shareholders as well as management* of the manufacturing sector.

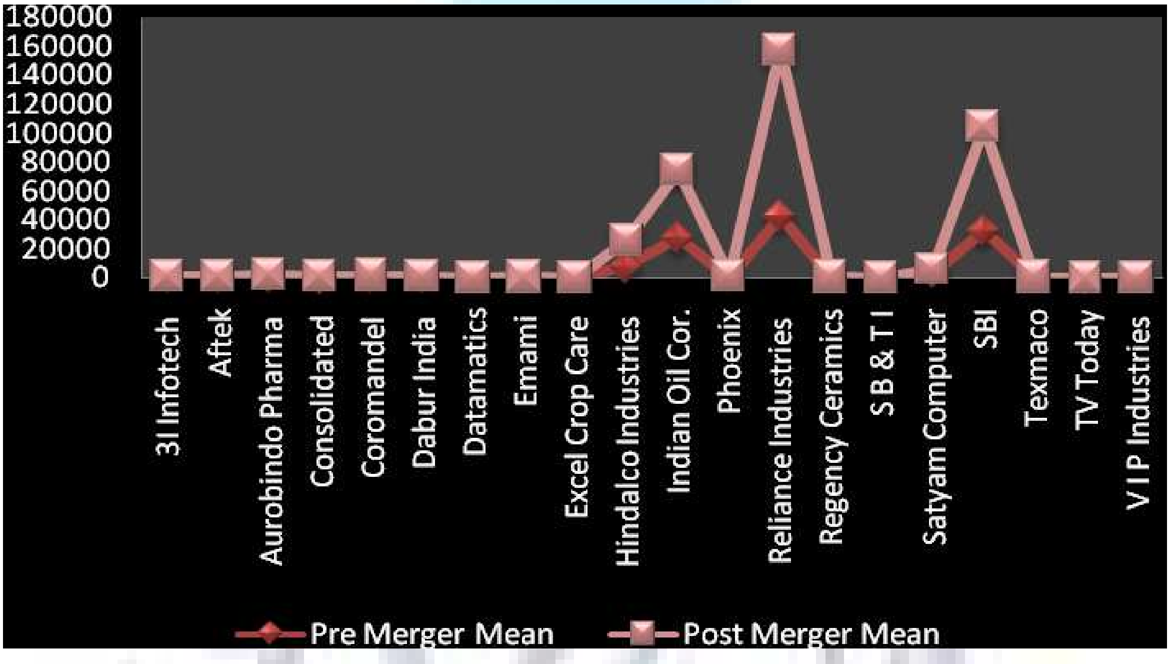
Net Worth = Share Capital + Reserve and Surpluses.
Or
= Total Assets – External Liabilities.

TABLE 8: IMPACT OF MERGER ON NETWORTH RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infot	239.48	111.41	924.85	+	158.06	-7.99	.015**
2.	Aftek	358.67	108.24	614.90	+	5.59	-3.92	.059*
3.	Aurobi	727.43	75.92	1398.12	+	377.79	-3.81	.062*
4.	Consol	561.81	9.75	710.65	+	67.08	-3.69	.066*
5.	Coroma	398.75	60.64	1169.66	+	354.90	-4.52	.046**
6.	Dabur	382.36	106.68	790.59	+	160.76	-10.56	.009***
7.	Datam	135.91	60.92	224.79	+	32.67	-5.15	.036**
8.	Emami	310.10	28.46	404.84	+	192.39	-.95	.439
9.	Excel	76.28	16.66	151.59	+	28.12	-11.35	.008***
10.	Hindalc	8050.45	1238.80	18160.44	+	3033.49	-8.67	.013**
11.	Indian	27347.49	3345.86	47195.40	+	4657.63	-18.19	.003***
12.	Phoeni	39.77	11.12	1468.04	+	165.17	-15.95	.004***
13.	Reliani	42379.75	8082.34	115362.53	+	29039.57	-5.87	.028**
14.	Regenc	188.97	133.00	529.53	+	157.49	-2.09	.171
15.	S B	98.04	12.43	116.96	+	10.80	-5.66	.030**
16.	Satyam	3423.02	838.78	2746.70	-	4128.26	.25	.824
17.	SBI	32398.30	4886.94	72254.12	+	10950.24	-11.33	.008***
18.	Texma	121.61	21.97	371.55	+	164.67	-2.97	.097*
19.	TV	1.96	2.87	129.69	+	56.97	-4.08	.055*
20.	V I P	58.61	2.31	128.26	+	17.59	-7.52	.017**

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

CHART G: IMPACT OF MERGER ON NETWORTH RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

The net worth ratio (***NWR***) is increased in nineteen out of 20 firms after merger (*see table 8*), however, the increase in ***NWR*** is significant for 17 firms only; at one per cent level for five firms (Dabur India Ltd., Excel Crop Care, Indian Oil Corpn, Phoenix Mills and State Bank of India) with t values -10.56, P< 0.01; -11.35, P< 0.01; -18.19, P< 0.01; -15.95, P< 0.01 and -11.33, P< 0.01; at five per cent level for seven firms (3I Infotech Ltd., Coromandel Ferti, Datamatics Tech., Hindalco Industr, Reliance Industry, S B & T Internat and V I P Industries) with t value -7.99, P< 0.05; -4.52, P< 0.05; -5.15, P< 0.05; -8.67, P< 0.05; -5.87, P< 0.05; -5.66, P< 0.05 and -7.52, P< 0.05; and at 10 per cent level for five firms (Aftek Ltd., Aurobindo Pharm, Consolidated Fin., Texmaco Ltd. and TV Today) with t value -3.92, P< 0.10; -3.81, P< 0.10; -3.69, P< 0.10; -2.97, P< 0.10 and -4.08, P< 0.10 respectively. It is inferred that there has been a significant increase in the mean ***NWR*** of seventeen acquirer firms after merger. On the whole, it is found that the ***M&A*** process has significant impact on the profitability position of acquirer firms in India.

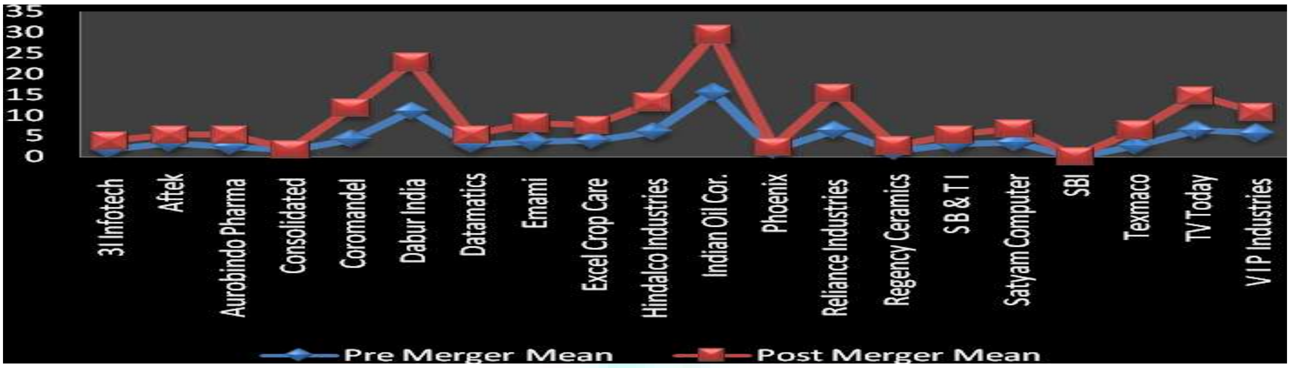
C. IMPACT OF MERGER ON OPERATING PERFORMANCE OF ACQUIRER FIRMS

In order to analyze the impact of merger on operating performance of acquirer firms, four measures are used viz; *debtors' turnover ratio **(DTR),** fixed assets turnover ratio **(FATR),** total assets turnover ratio **(TATR)*** and *working capital turnover ratio **(WCTR).***

$$\text{Debtors Turnover Ratio} = \frac{\text{Total sales}}{\text{Account receivable}}$$

VIII. Debtors Turnover Ratio (*DTR*): *DTR* is the relationship between total sales and account receivables. This ratio is an indication of the number of times debtors' turnover on an average in each year.

CHART H: IMPACT OF MERGER ON DEBTORS TURNOVER RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

The debtors turnover ratio (***DTR***) is increased after merger in 10 out of 20 firms (*see table 9*). Only in the case of Aftek Ltd and Hindalco Industries Ltd there has been an increase in the ***DTR*** after merger at 10 per cent level (t value = 3.23, P< 0.10 and -3.61, P< 0.10 respectively). Only in the case of Phoenix Mills Ltd. there has been a increase in the ***DTR*** after merger at five per cent level (t value = 9.78, P< 0.05). Among the firms with increase/decrease in ***DTR***, it has been statistically significant for ten acquirer firms only. Hence, it is inferred that there has been a significant increase in ***DTR*** of three acquirer firms after merger.

TABLE 9: IMPACT OF MERGER ON DEBTORS TURNOVER RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	1.88	.23	1.98	+	.26	-.35	.755
2.	Aftek Ltd.	3.29	.98	1.95	-	.99	3.23	.084*
3.	Aurobindo Pharma	2.53	.27	2.76	+	.12	-1.15	.368
4.	Consolidated Finvest	1.69	2.91	.00	-	.00	1.00	.421
5.	Coromandel Ferti.	4.28	.68	7.43	+	1.62	-2.91	.100
6.	Dabur India Ltd.	11.10	1.77	11.65	+	2.76	-.87	.475
7.	Datamatics Tech.	2.96	.52	2.35	-	.18	2.24	.154
8.	Emami Ltd.	3.69	.33	4.40	+	1.65	-.92	.454
9.	Excel Crop Care Ltd.	3.99	.51	3.56	-	.52	1.10	.385
10.	Hindalco Industries Lt	6.14	.39	6.96	+	.43	-3.61	.069*
11.	Indian Oil Corpn. Ltd.	15.62	2.72	13.82	-	2.58	.61	.599
12.	Phoenix Mills Ltd.	1.68	.29	.69	-	.13	9.78	.010**
13.	Reliance Industries Ltd	6.46	1.49	8.92	+	3.22	-1.86	.203
14.	Regency Ceramics	1.43	.80	1.19	-	.38	.34	.760
15.	S B & T International	3.08	1.14	2.15	-	.30	1.14	.370
16.	Satyam Computer Ser	3.47	.30	3.23	-	.54	1.48	.276
17.	State Bank Of India	.02	.01	.04	+	.05	-.53	.646
18.	Texmaco Ltd.	2.71	.34	3.71	+	.79	-1.64	.241
19.	TV Today Network	6.37	3.05	8.38	+	1.69	-2.35	.143
20.	V I P Industries Ltd.	5.76	1.24	4.90	-	.88	1.08	.393

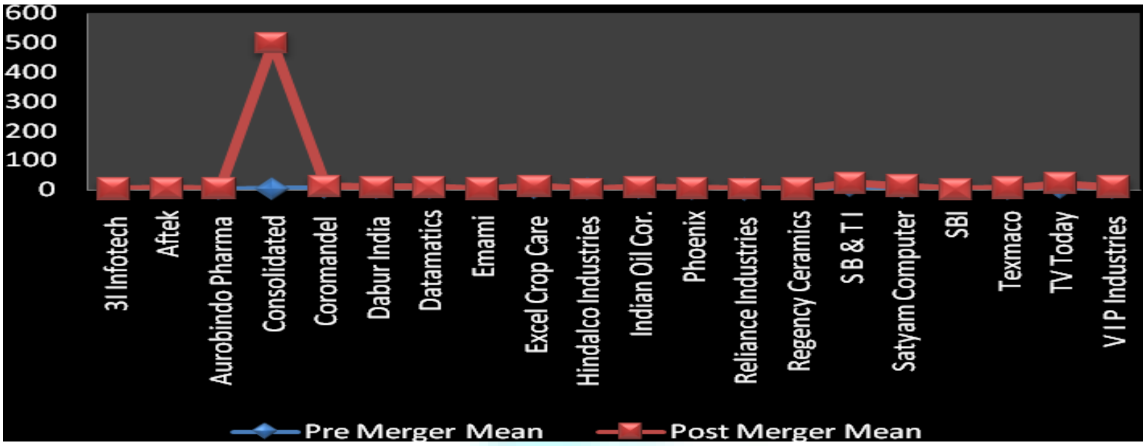
*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

TABLE 10: IMPACT OF MERGER ON FIXED ASSETS TO TURNOVER RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	1.36	.04	1.04	-	.07	9.23	.012**
2.	Aftek Ltd.	3.79	2.55	.64	-	.11	2.23	.155
3.	Aurobindo Pharma	1.48	.27	1.27	-	.59	.41	.718
4.	Consolidated Finvest	3.04	5.26	495.11	+	857.55	-1.00	.423
5.	Coromandel Ferti.	4.12	.97	6.32	+	5.93	-.69	.561
6.	Dabur India Ltd.	4.75	.90	3.45	-	2.82	.66	.574
7.	Datamatics Techno.	4.60	.80	2.25	-	1.74	3.34	.079*
8.	Emami Ltd.	1.17	.30	1.05	-	.84	.32	.775
9.	Excel Crop Care Ltd.	6.34	.74	4.53	-	3.85	.95	.441
10.	Hindalco Industries Lt	1.24	.10	1.44	+	.73	-.53	.644
11.	Indian Oil Corpn. Ltd.	4.11	.41	3.25	-	2.75	.54	.639
12.	Phoenix Mills Ltd.	.46	.14	3.42	+	5.81	-.90	.461
13.	Reliance Industries	1.69	.36	.95	-	.21	2.48	.131
14.	Regency Ceramics Ltd	.86	.42	1.33	+	1.31	-.65	.581
15.	S B & T International	13.14	6.01	8.95	-	7.77	.53	.646
16.	Satyam Computer Ser	8.75	.50	4.28	-	3.66	2.38	.140
17.	State Bank Of India	.16	.11	1.21	+	.26	-10.67	.009***
18.	Texmaco Ltd.	2.91	1.08	2.78	-	2.21	.18	.870
19.	TV Today Network	7.02	2.96	13.84	+	12.33	-1.25	.335
20.	V I P Industries Ltd.	4.57	.20	4.94	+	4.27386	-.15	.892

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

CHART I: IMPACT OF MERGER ON FIXED ASSETS TO TURNOVER RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

IX. Fixed Assets Turnover Ratio (*FATR*)

Assets are used to generate sales. Therefore, a firm should manage its assets efficiently to maximize its sales. The relationship between sales and assets is called assets turnover ratio. A firm's ability to produce a large volume of sales for a given amount of net sales is the most important aspect of its operating performance. The firm can compute fixed assets turnover simply by dividing sales by fixed assets.

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

The fixed assets turnover ratio (***FATR***) is increased after merger in eight out of 20 firms (*see table 10*). However, the increase in ***FATR*** is significant for State Bank of India with t value = -10.67, P< 0.01 at one per cent level. The decrease in ***FATR*** is also significant for two firms 3I Infotech Ltd. and Datamatics Techno. With t value = 9.23, P< 0.05 and 3.34, P< 0.10 at five per cent level and 10 per cent level respectively. Hence, it is inferred that there has been a significant increase in ***FATR*** of one acquirer firm only after merger.

TABLE 11: IMPACT OF MERGER ON TOTAL ASSETS TO TURNOVER RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	.65	.12	.59	-	.04	.67	.568
2.	Aftek Ltd.	.43	.08	.29	-	.04	5.44	.032**
3.	Aurobindo Pharma	.72	.12	.64	-	.19	.41	.716
4.	Consolidated Finvest	.22	.39	.02	-	.03	1.00	.422
5.	Coromandel Ferti.	1.31	.12	1.21	-	.87	.21	.851
6.	Dabur India Ltd.	1.79	.12	1.18	-	.74	1.32	.318
7.	Datamatics Techno.	.86	.20	.69	-	.43	.48	.675
8.	Emami Ltd.	.67	.07	.65	-	.43	.07	.950
9.	Excel Crop Care Ltd.	1.60	.16	1.11	-	.77	1.36	.305
10.	Hindalco Industries Lt	.65	.01	.81	+	.27	-.99	.423
11.	Indian Oil Corpn. Ltd.	1.86	.06	1.40	-	.94	.81	.501
12.	Phoenix Mills Ltd.	.29	.05	.18	-	.23	1.11	.380
13.	Reliance Industries Ltd	.87	.08	.70	-	.10	3.64	.068*
14.	Regency Ceramics Ltd	.36	.20	.41	+	.09	-.64	.583
15.	S B & T International	1.03	.31	.61	-	.46	.99	.424
16.	Satyam Computer Ser	.90	.04	1.10	+	1.02	-.34	.766
17.	State Bank Of India	.00	.00	.01	+	.00	-28.54	.001***
18.	Texmaco Ltd.	.82	.27	.81	-	.41	.03	.974
19.	TV Today Network	1.94	.82	1.85	-	1.55	.19	.861
20.	V I P Industries Ltd.	1.50	.06	1.22	-	.87	.53	.644

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

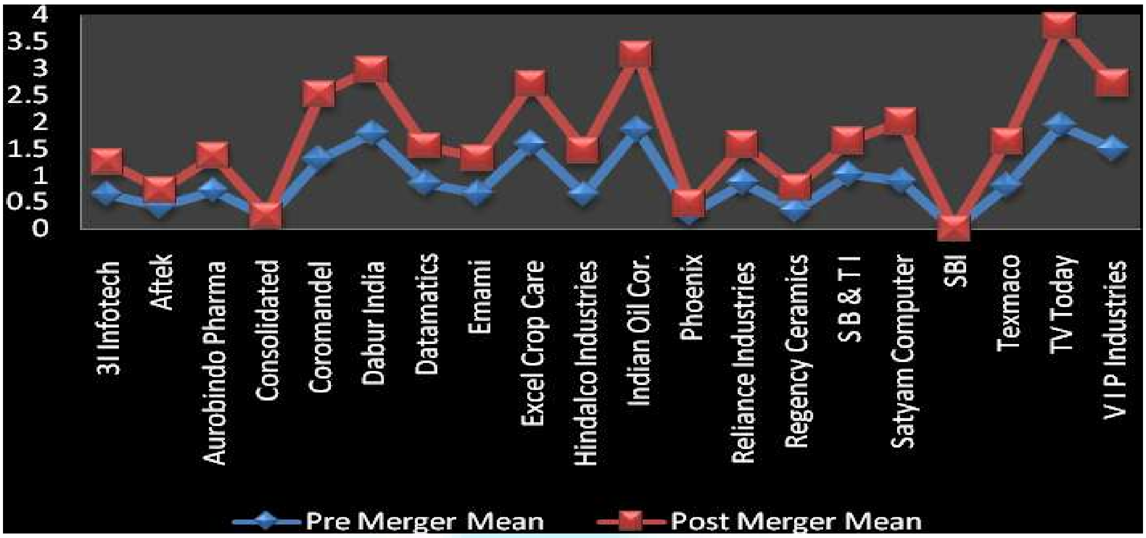
X. Total Assets Turnover Ratio (*TATR*)

The financial analysts normally like to compute the total assets turnover in addition to or instead of the fixed assets turnover. This ratio shows the firm's ability to generate sales from all financial resources committed to total assets. Total assets (***TA***) include net fixed assets (***NFA***) and current assets (***CA***) (***TA=NFA+CA***).

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

The total assets turnover ratio (***TATR***) is increased after merger in four out of 20 firms (*see table 11*). However, the increase in ***TATR*** is significant for State Bank of India only with t value = -28.54, P< 0.01. The decrease in ***TATR*** is also significant for two firms (3I Aftek Ltd and Reliance Industries Ltd) with t value = 5.44, P< 0.05 and 3.64, P< 0.10 at five per cent level and 10 per cent level respectively. Hence, it is inferred that there has been a significant increase in ***TATR*** of one acquirer firm only after merger.

CHART J: IMPACT OF MERGER ON TOTAL ASSETS TO TURNOVER RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

XI. Working Capital to Turnover Ratio (*WCTR*): This ratio shows the number of times the working capital results in sales. In other words, this ratio indicates the efficiency or otherwise in the utilization of short term funds in making sales. Working capital means *the excess of current assets over the current liabilities*. A careful handling of the short term assets and funds will mean reduction in the amount of capital employed, thereby improving turnover.

$$\text{Working capital turnover ratio} = \frac{\text{Cost of goods sold (or) sales}}{\text{Networking capital}}$$

It can be seen from *table 12* that the working capital turnover ratio (***WCTR***) is increased after merger in fourteen out of 20 firms. Only in the case of Hindalco Industries the increase in the ***WCTR*** has been significant after merger at 5 per cent level (t value = -4.97, P< 0.05). Hence, it is inferred that there has been a significant increase in ***WCTR*** of one acquirer firm after merger.

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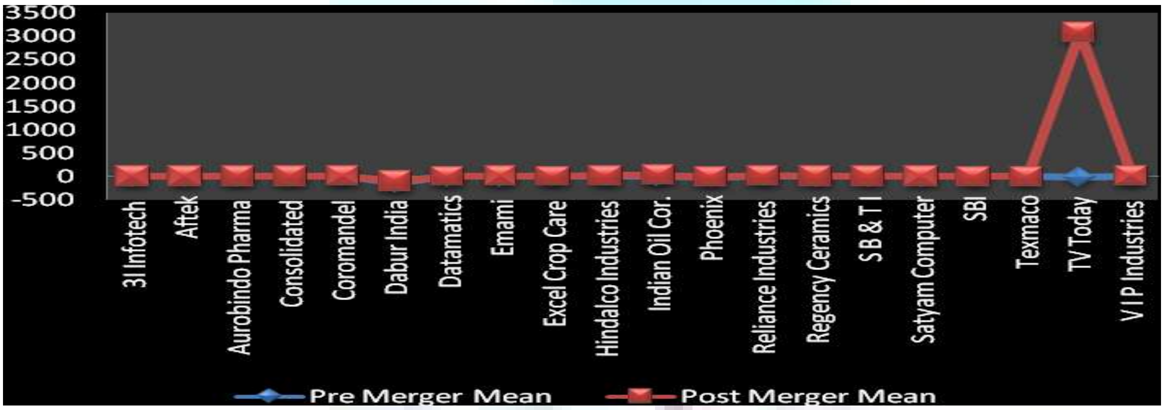
CHART K: IMPACT OF MERGERS ON WORKING CAPITAL TO TURNOVER RATIO OF ACQUIRER FIRMS



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

TABLE 12: IMPACT OF MERGER ON WORKING CAPITAL TO TURNOVER RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	2.00	1.10	2.27	+	.49	-.38	.740
2.	Aftek Ltd.	.63	.15	.66	+	.24	-.67	.570
3.	Aurobindo Pharm	1.80	.22	1.86	+	.18	-.35	.759
4.	Consolidated Fin	1.05	1.81	.00	-	.00	1.00	.419
5.	Coromandel Ferti	5.11	2.53	6.10	+	2.52	-.91	.457
6.	Dabur India Ltd.	-135.76	291.71	35.95	+	27.97	-1.05	.402
7.	Datamatics Tech.	3.02	.68	3.05	+	.37	-.12	.909
8.	Emami Ltd.	2.96	.82	6.69	+	5.60	-1.11	.380
9.	Excel Crop Care	3.38	1.28	3.35	-	.35	.02	.981
10.	Hindalco Industr	3.73	1.45	16.78	+	5.70	-4.97	.038**
11.	Indian Oil Corpn.	10.29	5.56	17.84	+	8.77	-1.70	.230
12.	Phoenix Mills	-12.29	20.44	2.05	+	3.95	-1.25	.335
13.	Reliance Industr	8.95	5.12	7.21	-	1.21	.76	.522
14.	Regency Ceramic	1.68	.51	1.53	-	.48	1.60	.249
15.	S B & T Internati	1.33	.28	1.35	+	.10	-.12	.910
16.	Satyam Compute	1.15	.14	3.77	+	11.98	-.37	.741
17.	State Bank Of	.03	.02	.04	+	.054	-.23	.839
18.	Texmaco Ltd.	7.02	6.43	-10.57	-	32.64	1.08	.391
19.	TV Today	-12.04	11.78	3091.50	+	5336.25	-1.00	.420
20.	V I P Industries	5.27	2.35	4.13	-	.32	.86	.478

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

D. FINANCIAL RISK OF ACQUIRER FIRMS AFTER MERGER

The condition of financial risk of the firms involved in ***M&As*** activities after merger is analyzed. In order to study the impact of merger on financial risk of the acquirer firms, three measures namely *ratio of long-term debt to equity* (***LTD_E***) or (***DER)***, *interest coverage ratio* (***EBI_I***), *total borrowing and equity to EBITD* (***TB&E_ EBITD***) have been used.

XII. Debt-Equity Ratio (*DER*): The relationship describing the lenders' contribution for each rupee of the owners' contribution is called *debt-equity ratio*. ***DER*** is computed by dividing the total debt by net worth.

$$\text{Debt- Equity Ratio} = \frac{\text{Total Debt}}{\text{Net worth}}$$

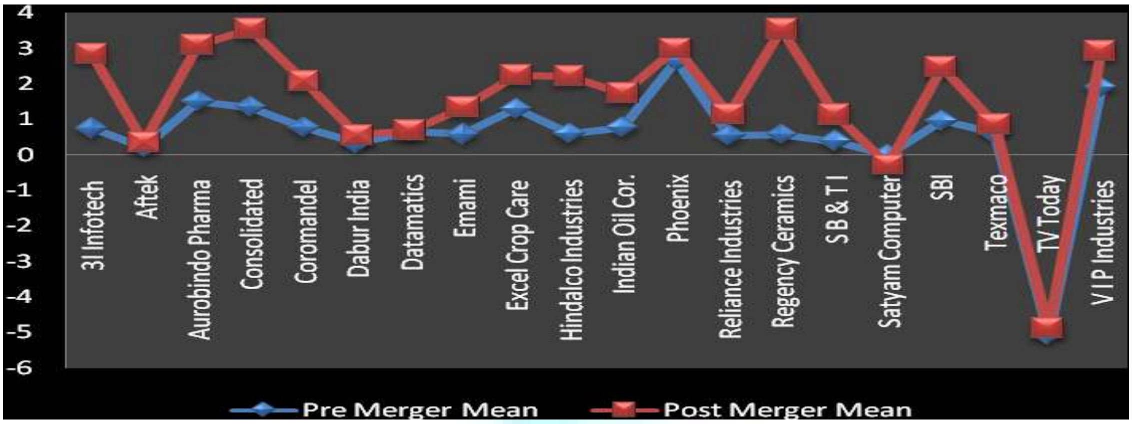
TABLE 13: IMPACT OF MERGER ON DEBT EQUITY RATIO OF ACQUIRER FIRMS

SI.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	.76	.17	2.09	+	.29	-17.61	.003***
2.	Aftek Ltd.	.21	.15	.15	-	.03	.61	.600
3.	Aurobindo Pharma	1.51	.21	1.59	+	.36	-.25	.826
4.	Consolidated Finvest	1.35	1.28	2.19	+	.74	-.73	.540
5.	Coromandel Fertilisers	.78	.12	1.29	+	.09	-4.43	.047**
6.	Dabur India Ltd.	.35	.11	.21	-	.06	2.00	.184
7.	Datamatics Tech.	.67	.63	.02	-	.01	1.75	.221
8.	Emami Ltd.	.59	.37	.76	+	.60	-.36	.752
9.	Excel Crop Care Ltd.	1.31	.38	.93	-	.10	2.25	.153
10.	Hindalco Industries Lt	.61	.07	1.60	+	.42	-3.58	.070*
11.	Indian Oil Corpn. Ltd.	.78	.17	.95	+	.07	-1.61	.248
12.	Phoenix Mills Ltd.	2.67	.27	.33	-	.08	11.78	.007***
13.	Reliance Industries Ltd	.55	.09	.60	+	.10	-.68	.566
14.	Regency Ceramics Ltd	.58	.69	2.95	+	1.90	-3.31	.080*
15.	S B & T International	.39	.10	.74	+	.06	-8.66	.013**
16.	Satyam Computer Ser	.01	.01	-.29	-	.54	.95	.442
17.	State Bank Of India	.97	.23	1.50	+	.08	-3.27	.082*
18.	Texmaco Ltd.	.63	.23	.24	-	.04	3.39	.077*
19.	TV Today Network	-5.06	5.10	.18	+	.15	-1.82	.210
20.	V I P Industries Ltd.	1.91	.18	1.02	-	.38280	3.95	.058*

*Source: Complied &edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

The debt equity ratio (***DER***) is increased in 12 out of 20 firms after merger (*see table 13*), however, the increase in ***DER*** is significant for six firms only; at one per cent level for one firm (3I Infotech Ltd) with t value -17.61, P< 0.01; at five per cent level for two firms (Coromandel Fertilisers and S B & T International) with t value = -4.43, P< 0.05 respectively; and -8.66, P< 0.05; and at 10 per cent level for three firms (Hindalco Industries Ltd, Regency Ceramics Ltd and State Bank of India) with t value = -3.58, P< 0.10), -3.31,P< 0.10) and -3.27, P< 0.10 respectively. Hence, it is inferred that there has been a significant increase in ***DER*** of six acquirer firms after merger.

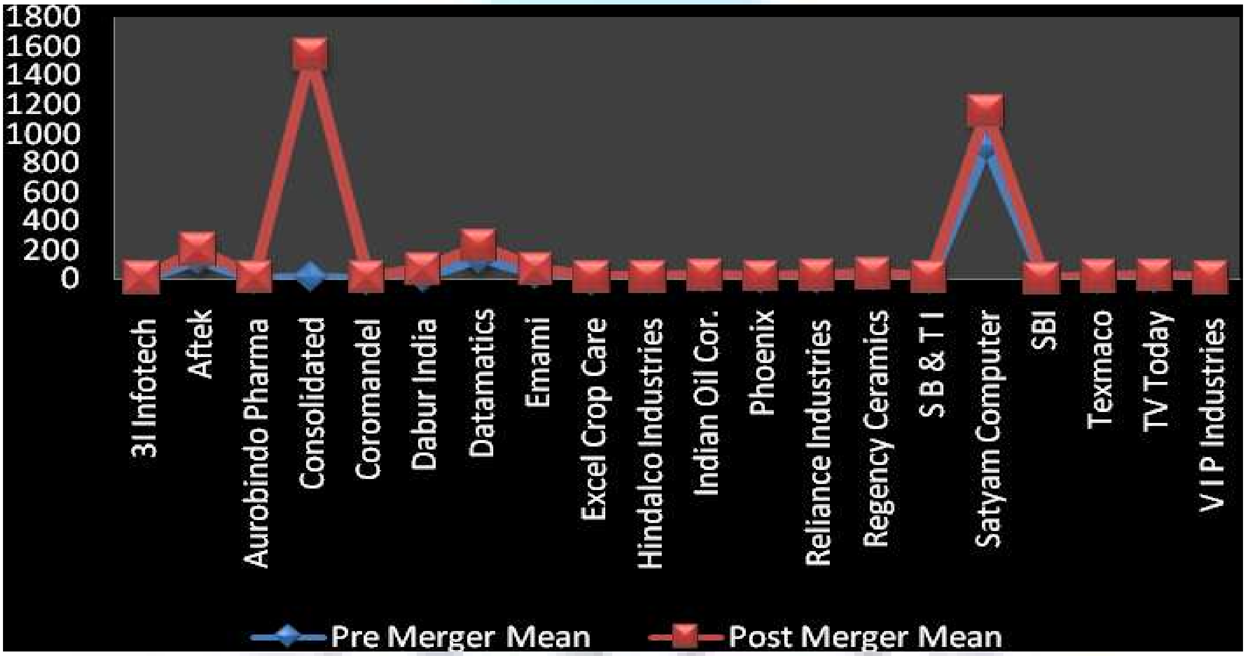
CHART L: IMPACT OF MERGERS ON DEBT EQUITY RATIO OF ACQUIRER FIRMS



XIII. Interest Coverage Ratio (*ICR*):

The interest coverage ratio (*ICR*) indicates the number of times interest is covered by the profits available to pay the interest charges. The long term creditors of manufacturing sector are much interested in knowing the ability of manufacturing sector to pay interest on long term borrowing. The thumb rule is *higher the ratio, safer is to long-term creditors* because even if the earnings of the manufacturing sector fall, the corporate firm may be able to meet their commitment of fixed interest charges. But too high a ratio may not be good for the firm because it may imply that the firm is not using debt as a source of finance in order to increase the earnings per share (***EPS***). The ***ICR*** does not take into consideration the other fixed obligations like payment of preference dividend and repayment of loan installments.

CHART M: IMPACT OF MERGER ON INTEREST COVERAGE RATIO OF ACQUIRER FIRMS



Source: Complied &edited from the financial statements of selected firms listed-CMIE-prowess package.

TABLE 14: IMPACT OF MERGER ON INTEREST COVERAGE RATIO OF ACQUIRER FIRMS

Sl.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	1.52	2.41	5.33	+	2.74	-1.30	.323
2.	Aftek Ltd.	139.53	1.51	61.42	-	58.87	2.34	.143
3.	Aurobindo Pharma	2.71	2.44	6.77	+	5.49	-.93	.448
4.	Consolidated Finve	13.85	2.62	1529.54	+	256.08	-10.35	.009***
5.	Coromandel Ferti.	5.13	1.40	7.09	+	2.26	-1.65	.239
6.	Dabur India Ltd	19.16	5.91	49.40	+	37.19	-1.54	.262
7.	Datamatics Tech.	146.63	89.76	80.43	-	18.36	1.53	.266
8.	Emami Ltd.	48.63	55.35	16.93	-	17.31	1.41	.293
9.	Excel Crop Care	4.79	1.95	5.72	+	1.24	-.87	.475
10.	Hindalco Industries	7.74	.56	5.18	-	2.41	1.56	.258
11.	Indian Oil Corpn.	14.34	6.25	7.89	-	1.58	1.46	.280
12.	Phoenix Mills Ltd.	8.16	1.22	10.43	+	4.49	-1.09	.387
13.	Reliance Industries	6.52	1.13	16.52	+	5.06	-3.98	.058*
14.	Regency Ceramics	23.40	.72	10.41	-	14.95	1.43	.288
15.	S B & T Internatio	6.55	7.46	1.82	-	.64	1.02	.412
16.	Satyam Computer	919	473	234.23	-	298.86	3.08	.091*
17.	State Bank Of India	1.32	.00	1.29	-	.01	2.77	.109
18.	Texmaco Ltd.	3.78	1.39	12.02	+	5.25	-3.48	.073*
19.	TV Today	1.35	1.09	18.36	+	25.07	-1.20	.352
20.	V I P Industries Ltd.	2.15	.075	3.97	+	2.68099	-1.15	.368

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

$$\text{Interest Coverage Ratio } (ICR) = \frac{\text{EBI}}{\text{Interest}}$$

The ***ICR*** is increased after merger in 11 out of 20 firms (*see table 14*), however, the increase in ***ICR*** after merger is statistically significant for three firms only (Consolidated Finve with t value = -10.35, P< 0.10; Reliance Industries and Texmaco Ltd with t value = -3.98, P< 0.10 -3.48, P< 0.10 respectively). For the other nine firms the ***ICR*** is declined though it is statistically significant for one firm only (Satyam Computer) with t value 3.08, P<0.10 respectively. Hence, it is inferred that there has been a decrease in ***ICR*** for nine acquirer firms after merger. This is a good significant positive impact of ***M&A*** of the acquirer firms after merger.

XIV. Total Borrowings and Equity to EBITD: The ratio of total borrowings and equity to EBITD examines the relationship between earnings available before interest, tax and depreciation to the repaying obligations of a manufacturing sector. *This ratio should be positive; higher the ratio, better for the acquirer firms.*

$$\text{Total Borrowings and Equity to EBITD} = \frac{\text{EBITD}}{\text{Total Borrowing and Equity}}$$

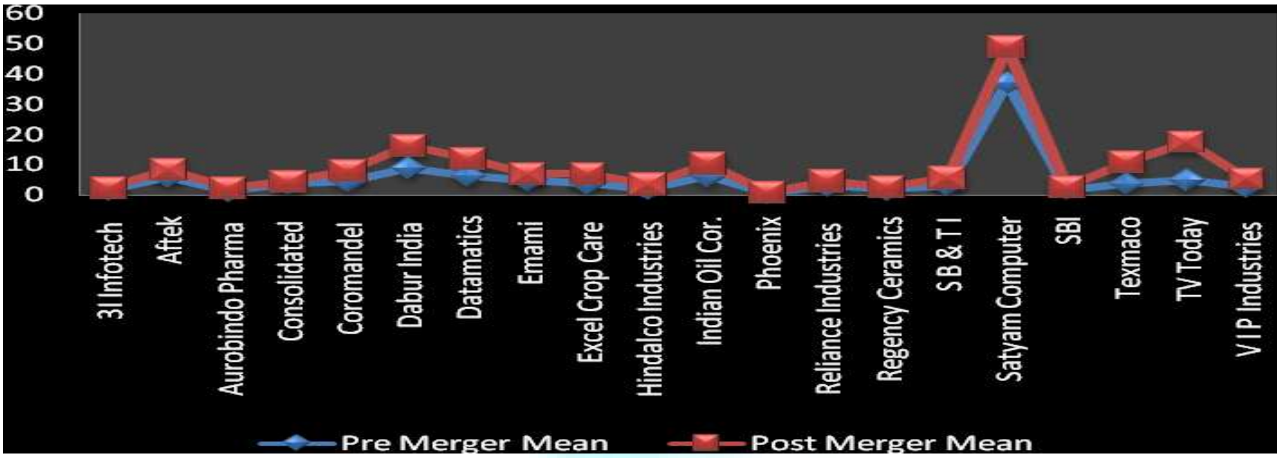
TABLE 15: IMPACT OF MERGERS ON TOTAL BORROWINGS AND EQUITY TO EBITD OF ACQUIRER FIRMS

Sl.No.	Name of the firms	Pre-Merger		Post-Merger			t-value	p-value
		Mean	SD	Mean	Impact	SD		
1.	3I Infotech Ltd.	1.51	.38	.61	-	.47	9.12	.01**
2.	Aftek Ltd.	6.08	6.94	2.27	-	1.94	1.12	.37
3.	Aurobindo Pharma	1.34	.29	.88	-	.75	1.25	.33
4.	Consolidated Finv	3.71	5.41	.67	-	.28	.94	.44
5.	Coromandel Ferti.	4.66	.85	3.19	-	2.90	.99	.42
6.	Dabur India Ltd.	8.89	1.56	7.39	-	6.42	.32	.77
7.	Datamatics Tech.	6.43	1.92	5.46	-	3.97	.33	.77
8.	Emami Ltd.	4.88	1.40	1.95	-	2.08	1.49	.27
9.	Excel Crop Care	3.92	.72	2.87	-	2.48	.62	.59
10.	Hindalco Industries	2.07	.14	1.40	-	1.23	1.01	.41
11.	Indian Oil Corpn.	6.30	.91	3.95	-	3.38	1.50	.27
12.	Phoenix Mills Ltd.	.59	.12	.20	-	.14	8.04	.01**
13.	Reliance Industries	2.97	.55	1.55	-	1.35	1.38	.30
14.	Regency Ceramics Ltd	1.99	1.52	.45	-	.11	6.38	.09*
15.	S B & T Internatio	3.26	1.30	2.33	-	.25	3.25	.19
16.	Satyam Computer S	37.11	6.57	11.69	-	12.19	3.81	.06*
17.	State Bank of India	1.82	.52	.65	-	.56	6.43	.02**
18.	Texmaco Ltd.	3.67	1.77	7.12	+	6.09	-.78	.51
19.	TV Today Network	4.82	2.01	12.67	+	10.35	-1.22	.34
20.	V I P Industries Ltd.	2.85	.33	2.44	-	1.90	.34	.76

*Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package. Degree of freedom is 8 for all t-values. *significant at 10% level **Significant at 5% level; ***Significant at 1% level.*

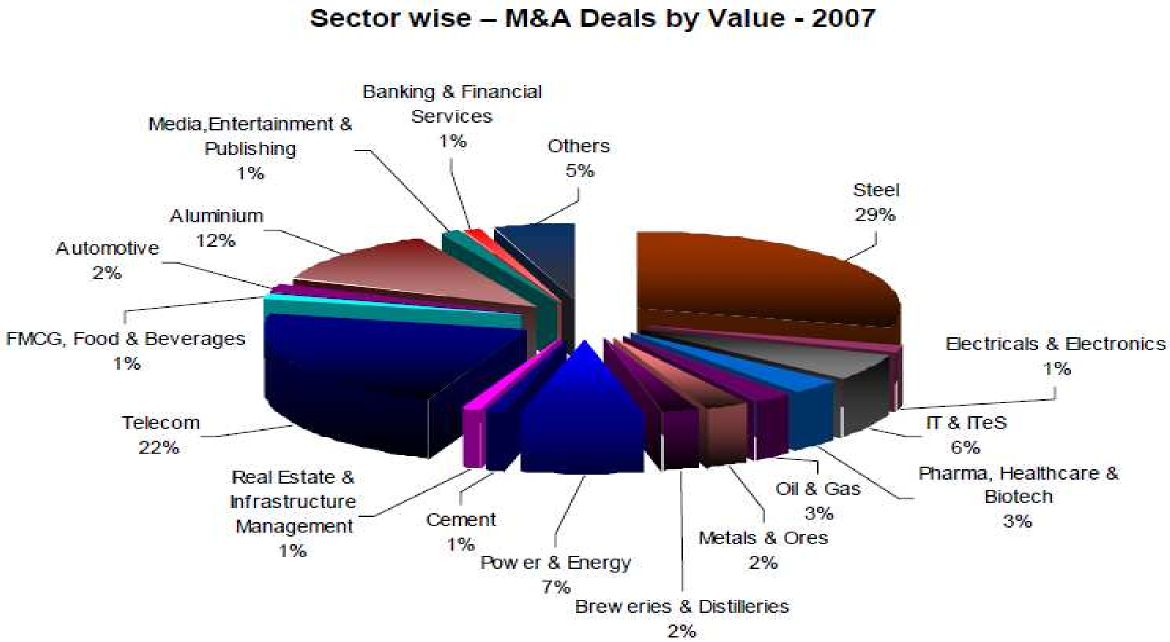
The total borrowings and equity to EBITD (***TBE _ EBITD***) is increased in two out of 20 firms after merger (*see table 15*). However, the increase in ***TBE _ EBITD*** is not significant. For the other 18 firms, the ***TBE _ EBITD*** is decreased, but only for five firms (firms against serial numbers 1, 12, 14, 16, & 17) it is statistically significant with t value 9.12, P< 0.05; 8.04, P< 0.05; 6.38, P< 0.05; 3.81, P< 0.05 and 6.43, P< 0.05 respectively. The decrease in ***TBE _ EBITD*** is good for the firms. Hence, there is a positive impact of ***M&A*** on the performance of acquirer firms in respect of profitability. Hence, it is inferred that there has been a decrease in ***TBE _ EBITD*** for 18 acquirer firms after merger. On the whole, it is found that the ***M&A*** process has significant positive impact on financial risk position of acquirer firms in India.

CHART N: IMPACT OF MERGER ON TOTAL BORROWINGS AND EQUITY TO EBITD OF ACQUIRER FIRMS



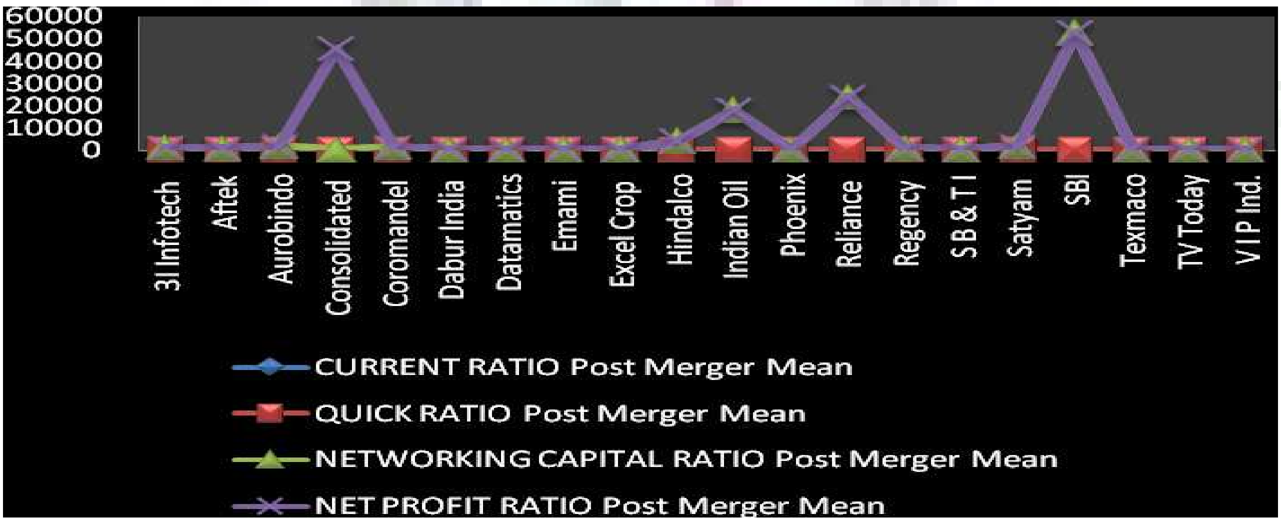
Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

CHART O



Source: © Grant Thornton India 2008

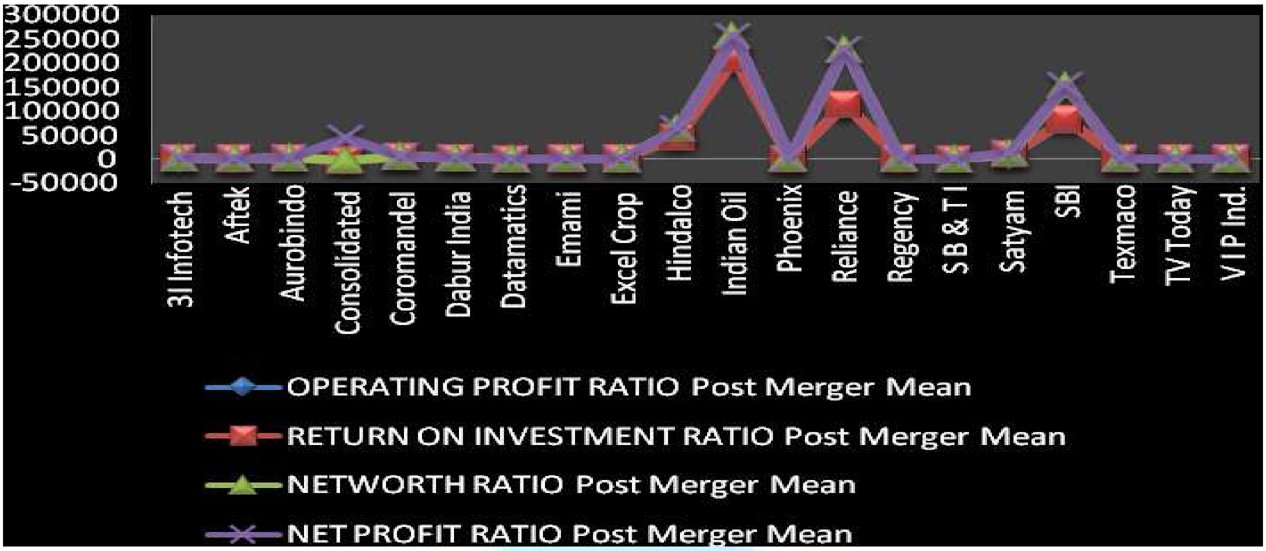
CHART P



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

The ***M&A*** process has significant impact on ***CR*** of acquirer firms in India, the ***QR*** is significant for three acquirer firms only. It is also inferred that there has been a significant increase in ***QR*** of acquirer firms after merger and it is inferred that there has been a significant increase in ***WCR*** of seven Indian acquirer firms after merger process in India.

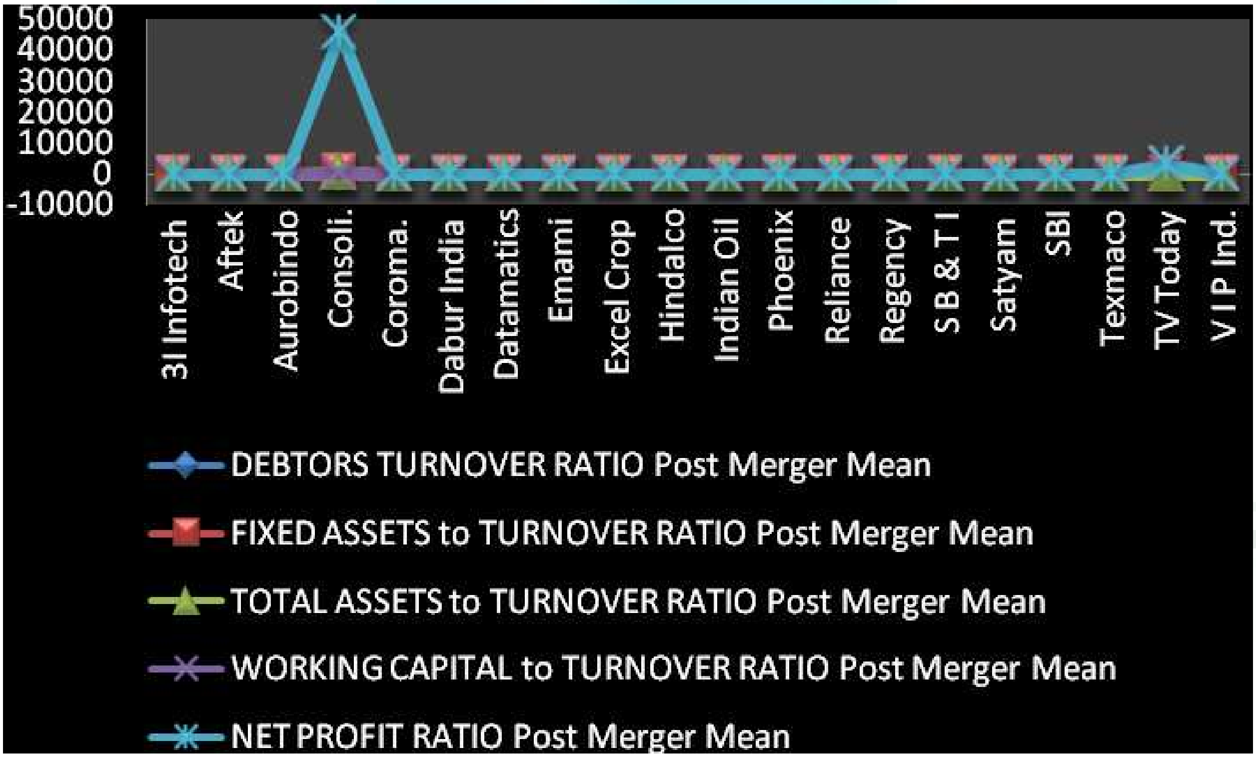
CHART Q



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

The merger activity has a significant impact on net profit ratio (***NPR).*** It is inferred that there has been a significant increase in ***NPR*** of six acquirer firms after merger. For all firms the increase in operating profit margin (***OPR)*** has been statistically significant. It is inferred that there has been a significant increase in ***OPR*** of two acquirer firms after merger. Among the firms with increase in return on investment ratio (***ROIR)***, it has been statistically significant for eight acquirer firms only; there has been a significant increase in ***ROIR*** of six acquirer firms after merger; there has been a significant increase in the mean ***NWR*** of seventeen acquirer firms after merger; on the whole, the ***M&A*** process has significant impact on the profitability position of acquirer firms in India.

CHART R



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

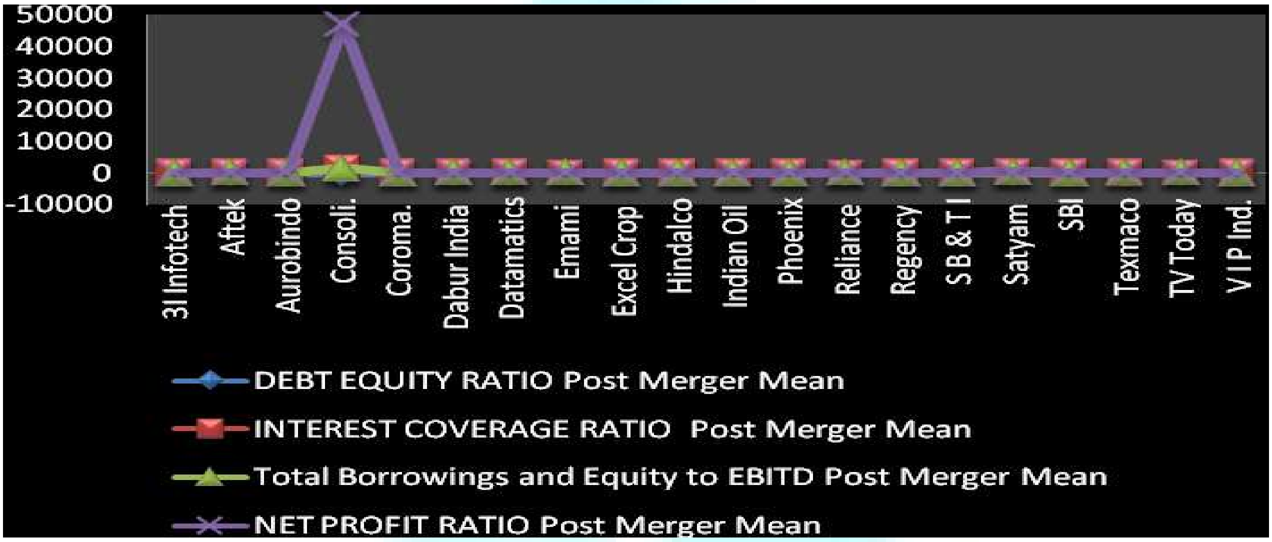
The merger activity has a significant impact on ***DTR***, it has been statistically significant for 10 acquirer firms; there has been a significant increase in ***DTR*** of three acquirer firms after merger. The ***FATR*** is increased after merger in eight out of 20 firms; there has been a significant increase in ***FATR*** of one acquirer firm only after merger. The ***TATR*** is increased after merger in four out of 20 firms; there has been a significant increase in ***TATR*** of one acquirer firm only after merger. The ***WCTR*** is increased after merger in fourteen out of 20 firms, which is statistically significant for 14 acquirer firms; there has been a significant increase in ***WCTR*** of one acquirer firm after merger.

The merger activity has a significant impact on ***DER; the DER*** is increased in 12 out of 20 firms after merger; it is inferred that there has been a significant increase in ***DER*** of six acquirer firms after merger. The ***ICR*** is increased in 11 out of 20 firms after merger; there has been a decrease in ***ICR*** for 10 acquirer firms after merger, which is a good significant positive impact of M&A of the acquirer firms after merger. The ***TBE _ EBITD*** is increased in two out of 20 firms after merger; there has been a decrease in ***TBE to EBITD*** for 18 acquirer firms after merger. On the whole, it is found that the ***M&A*** process has significant impact on financial risk position of acquirer firms in India.

CONCLUSION

In the context of introduction of large-scale deregulatory policy measures in the 1990s in general and three important amendments made to the Indian Patent Act (1970) in 1999, 2002 and 2005 in particular, the present paper makes an attempt to examine the impact of ***M&A*** on the Short-Term Post-Merger Performance of Corporate Firms in India. A merger can be termed as an investment alternative in the context of scarce fund resources. The financial characteristics of a firm have a critical role in the merger decision process. They are either explicit decision variables or directly reflect the non-financial reasons for acquisition characteristics. The present study measured the financial performance of sample firms from the viewpoint of *liquidity, profitability, operating performance and financial risks*. The study proves that merging corporate firms in India appear to have performed better financially after the merger, as compared to their performance in the pre-merger period. This improvement in performance can be attributed to the merger. Enhanced efficiency of utilization of their assets by the merged firms appears to have led to the generation of higher operating cash flows. Synergistic benefits appear to have accrued to the merged entities due to the transformation of the uncompetitive, fragmented nature of Indian corporate firms before merger, into consolidated and operationally more viable business units. What this study thus indicates is that in the short run, mergers appear to have been financially beneficial for Indian corporate firms, which underwent the ***M&A*** process during 2007..

CHART S



Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

LIMITATIONS OF THE STUDY

The study is mainly based on secondary data. The study is confined to Indian corporate firms that are categorized into Agri. & Agro Products, Aluminium, Automotive, Aviation, Banking & Financing Services, Cement, FMCG, Food &Beverages, Hospitality, IT & ITeS, Manufacturing, Media, Entertainment & Publishing, Metals & Ores, Oil & Gas, Pharm, Health & Biotech, Plastic & Chemicals, Power & Energy, Real Estate & Infrastructure, Steel and Textiles & Apparels only. The study is limited to 20 Indian corporate firms only out of 52, which have undergone mergers and acquisitions during 2007. In the absence of more reliable data, CMIE data on ***M & As*** are used in this study. The study is undertaken only for the pre merger period of three years and post merger period of three years, leaving a lengthy coverage of period for want of studying the immediate impact of merger as it was intended for short- run analysis.

A small sample generally fails to capture adequately the variations in impact of ***M&A***, especially when the sample is drawn from diverse product groups/industries (Mantravadi and Reddy, 2008). Further, a shorter timeframe, on the other hand, undermines the process of adjustment and the conclusion on impact therefore may be misleading. Besides, a better understanding of the impact of ***M&A*** on financial performance also requires controlling for the influence of various structure, conduct (other than ***M&A***) and policy related variables.

SCOPE FOR FURTHER STUDIES

- Studies with similar objectives could be attempted with reference to other sectors like banking, insurance, IT sector etc.
- The study with similar objectives could be made from time to time covering a lengthy period.
- The stock index price improvement could be analyzed for pre merger and post merger period.
- Impact of ***M&A*** on financial performance and shareholders' wealth of acquirer firms may be studied.
- Important implication for research concerning ***M&As*** is to take the integration issues into consideration along with the human factors.

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APPENDIX

APPENDIX A - LIST OF FIRMS UNDERGONE MERGER DURING THE CALENDAR YEAR 2007

Sl.No.	Acquirer Firms	Target Firms	Sector
1.	Shiva fertilizers ltd	Parvati fertilizers ltd	Agri. & agro products
2.	Coromandel fertilisers ltd	Godavari fertilisers and chemica ltd	Agri. & agro products
3.	Khaitan chem.& fertlizers ltd	Shobhan enterprisesprivate ltd	Agri. & agro products
4.	Hindalco industries ltd	Indian aluminium co. ltd (indal)	Aluminium
5.	ANG auto ltd	ANG Auto tech pvt ltd	Automotive
6.	Jamna auto industries	Jai parabolic springs	Automotive
7.	Air India	Indian airlines	Aviation
8.	Emami	J B marketing &finance (JB)	Banking & fin. services
9.	Cosmos cooperative bank	Manasa cooperative bank	Banking & fin. services
10.	Almondz global securities ltd	Almondz capital markets pvt ltd	Banking & fin. services
11.	State bank of India (SBI)	State Bank of Saurashtra	Banking & fin. services
12.	Consolidated finvest & hol.	Rishi trading firm	Banking & fin. services
13.	Rain commodities	Rain calcining ltd	Cement
14.	VIP industries ltd	Blow plast ltd	FMCG, food &beverages
15.	Dabur India ltd (DIL)	Dabur foods ltd (DFL)	FMCG, food &beverages
16.	Dhunseri tea &industries ltd	Tezpore tea firm ltd	FMCG, food &beverages
17.	GL hotels	Mayfair banquets private ltd	Hospitality
18.	Datamatics technologies Ltd	Datamatics ltd	IT & ITeS
19.	Satyam computer services ltd	Nipuna	IT & ITeS
20.	Aftek ltd	C2Silicon software solution pvt ltd	IT & ITeS
21.	Mistral solutions	Mistral software and mistral	IT & ITeS
22.	Axon infotech ltd.	Quasar innovations	IT & ITeS
23.	Locuz enterprise solutions ltd	Choice solutions ltd	IT & ITeS
24.	3i Infotech ltd	SDG Software Technologies Ltd	IT & ITeS
25.	Eveready industries India	Powercell battery India	Manufacturing
26.	VIP industries	Aristocrat luggage ltd	Manufacturing
27.	PG foils	Prem cables	Manufacturing
28.	Adlabs films	Katch 22 entertainment	Media, ent, & publishing
29.	TV today network ltd	Radio today broadcasting ltd	Media, en. &publishing
30.	Gujarat NRE coke ltd	India NRE minerals ltd	Metals & ores
31.	Reliance industries ltd	IPCL	Oil & gas
32.	Goa carbon ltd (GCL)	Paradeep carbons ltd	Oil & gas
33.	Indian oil corporation	IBP's petroleum retail business	Oil & gas
34.	Regency ceramics ltd	Regma ceramics ltd	Others
35.	Mahindra forgings ltd	Mahindra forgings Mauritius ltd	Others
36.	SB&T international	Mimansa jewellery	Others
37.	Jay engineering works	Usha International	Others
38.	Indoco remedies	La nova chem India pvt ltd	Pharma, health& biotech
39.	Bodal chemicals ltd	Milestone organic ltd (MOL)	Pharma, health& biotech
40.	Aurobindo pharma ltd	APL Life Sciences ltd	Pharm, health & biotech
41.	Excel crop care ltd	Business units of excel industries ltd	Plastic & chemicals
42.	Texmaco ltd	Shree export house ltd	Power & energy
43.	KEC international ltd	RPG transmission ltd	Power & energy
44.	Texmaco ltd	Evershine merchants pvt ltd	Real estate & infrast.
45.	Phoenix mills ltd	Ashok Ruia Enterprisespvt ltd	Real estate & infrast.
46.	Nitco tiles	Shark properties (SPPL)	Real estate & infrast.
47.	Nitco realties (NRPL)	Motivation properties(MPPL)	Real estate & infrast.
48.	Radhe developers India ltd	Radhe Infrastructure & Projects (India) ltd	Real estate & infrast.
49.	Shree precoated steels	Anik development corporation	Steel
50.	JSW steel ltd	Southern iron &steel firm ltd	Steel
51.	Kamadgiri synthetics	Stripes apparels	Textiles & apparels
52.	Maxwell industries	Microtex India	Textiles & apparels

Source: © Grant Thornton India 2008

APPENDIX B - "T" VALUE OF IMPACT OF M & A ON VARIOUS DIMENSIONS (VARIABLES)

Sl.No.	Acquirer Firms	Liquidity Statistics			Profitability Statistics				Operating Performance Statistics				Financial Risk Statistics		
		CR	QR	NWCR	NPR	OPR	ROIR	NWR	DTR	FATR	TATR	WCTR	DER	ICR	TB&E_ EBITD
1.	3I Infotech	NS	NS	**	NS	NS	NS	**	NS	**	NS	NS	***	NS	**
2.	Aftek Ltd.	NS	NS	NS	**	NS	**	*	*	NS	**	NS	NS	NS	NS
3.	Aurobindo	NS	NS	**	NS	NS	NS	*	NS	NS	NS	NS	NS	NS	NS
4.	Consolidated	NS	NS	NS	*	NS	NS	*	NS	NS	NS	NS	NS	***	NS
5.	Coromandel	NS	NS	NS	**	NS	*	**	NS	NS	NS	NS	**	NS	NS
6.	Dabur India	NS	NS	NS	**	NS	*	***	NS	NS	NS	NS	NS	NS	NS
7.	Datamatics	NS	NS	NS	NS	NS	NS	**	NS	*	NS	NS	NS	NS	NS
8.	Emami Ltd.	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
9.	Excel Crop	NS	NS	NS	NS	NS	NS	***	NS	NS	NS	NS	NS	NS	NS
10.	Hindalco	**	NS	**	**	NS	NS	**	*	NS	NS	**	*	NS	NS
11.	Indian Oil	NS	NS	NS	NS	NS	NS	***	NS	NS	NS	NS	NS	NS	NS
12.	Phoenix	NS	NS	NS	*	**	***	***	**	NS	NS	NS	***	NS	**
13.	Reliance	**	*	*	NS	NS	NS	**	NS	NS	*	NS	NS	*	NS
14.	Regency	**	NS	***	NS	*	*	NS	NS	NS	NS	NS	*	NS	*
15.	S B & T	*	NS	*	NS	NS	NS	**	NS	NS	NS	NS	**	NS	NS
16.	Satyam	*	**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*	*
17.	SBI	NS	NS	NS	NS	NS	NS	***	NS	***	***	NS	*	NS	**
18.	Texmaco	NS	NS	NS	NS	NS	NS	*	NS	NS	NS	NS	*	*	NS
19.	TV Today	*	*	NS	NS	NS	*	*	NS	NS	NS	NS	NS	NS	NS
20.	V I P	NS	NS	*	NS	NS	NS	**	NS	NS	NS	NS	*	NS	NS

NS – Not significant; **Significant at 10% level; **Significant at 5% level; ***Significant at 1% level.*

APPENDIX C - DESCRIPTION OF VARIOUS MEASURES USED FOR ANALYSIS

No.	Element Dimension	Ratios	Measure	Description
1.	**Liquidity**	a. Current ratio	Current assets / Current liabilities	Relation between current assets to current liabilities
		b. Quick Ratio	Liquid assets / Liquid liabilities	Relationship between liquid assets to liquid liabilities
		c. working capital ratio	Current Assets-Current Liabilities	Relation between current assets to current liabilities
2.	**Profitability**	d. Net Profit Ratio	EBIT / Income	Relationship between EBIT to total income
		e. Operating Profit Ratio	Profit / Income	Relationship between profit to total income
		f. Return on Investment Ratio	EBIT / Net Investment	Relationship between EBIT to net investment
		g. Net Worth Ratio	Share Capital +Reserve and Surplus or Total Assets-External Liabilities	Relationship between owners funds
3.	**Operating Performance**	h. Debtors Turnover Ratio	Total Sales / Account Receivables	Relationship between total sales to account receivable
		i. Fixed Assets Turnover Ratio	Sales / Fixed Assets	Relationship between sales to fixed assets
		j. Total Assets Turnover Ratio	Sales / Total Assets	Relationship between sales to total assets
		k.Working Capital Turnover Ratio	Cost of Goods Sold or Sales / Networking Capital	Relationship between cost of goods sold to networking capital
4.	**Financial Risk**	l. Debt-Equity Ratio	Total debt / Net worth	Relationship between total debts to net worth
		m. Interest Coverage Ratio	EBI / Interest	Relationship between EBI to interest
		n. Total Borrowing and Equity to EBITD	EBITD / Total Borrowing and Equity	Relationship between EBITD to total borrowing and equity

APPENDIX D - LIQUIDITY RATIOS OF SELECTED CORPORATE FIRMS MERGED DURING 2007

Sl.No.	Acquirer Firms	Prior to Merger									Post Merger								
		CR			QR			NWCR			CR			QR			NWCR		
		04	05	06	04	05	06	04	05	06	08	09	10	08	09	10	08	09	10
1.	3I Infotech	1.70	1.69	3.24	1.48	1.52	3.09	132	89.76	395.62	2.76	2.15	1.78	2.4	1.83	1.45	703.99	934.38	922.16
2.	Aftek Ltd.	16.98	15.56	9.11	16.85	15.16	8.9	171.17	357.29	377.13	7.04	14.02	14.48	6.59	11.43	12.31	408.68	413.85	367.25
3.	Aurobindo	1.45	1.33	1.42	0.74	0.64	0.8	949.19	688.31	1015.23	1.7	1.38	1.3	0.93	0.71	0.64	1524.78	1705.04	1778.04
4.	Consolidated	1.31	2.27	2.77	0.83	1.47	2.22	150.17	13.59	9.42	2.17	13.33	2.72	1.35	12.47	1.78	5.65	74.74	13.11
5.	Coromandel	1.44	1.45	1.41	0.81	0.9	0.8	485.92	204.63	363.47	1.71	1.23	1.26	0.8	0.65	0.81	740.51	1071.46	1548.91
6.	Dabur India	0.94	0.81	0.96	0.31	0.25	0.35	334.57	-3.27	31.85	0.94	0.92	1.02	0.36	0.35	0.33	35.29	141.35	176.25
7.	Datamatics	1.71	3.04	3.64	1.41	2.15	3.31	42.04	39.6	49.46	3.38	2.22	3.07	2.39	1.88	2.77	47.69	87.03	97.35
8.	Emami Ltd.	6.55	4.08	2.39	4.32	2.38	1.59	97.89	82.82	79.4	2.28	1	1.81	1.22	0.66	1.44	201.35	58.4	258.1
9.	Excel Crop	1.22	1.22	1.2	0.72	0.63	0.65	176.22	109.64	108.33	1.19	1.24	1.29	0.63	0.61	0.68	163.88	206.79	224.87
10.	Hindalco	2.04	1.58	1.85	0.92	0.66	0.72	3646.62	2076.88	3847.57	1.08	1.02	1.16	0.51	0.58	0.57	4167.61	2930.62	5017.08
11.	Indian Oil	1.39	1.41	1.36	0.43	0.4	0.29	34134.22	12101.5	13364.27	1.29	0.97	1.21	0.37	0.31	0.35	22881.07	11362.73	19448.41
12.	Phoenix	5.3	2	1.03	3.62	1.15	0.49	37.23	-1.16	-25.8	0.6	2.52	1.37	0.37	2.08	0.92	-93.05	200.52	18.76
13.	Reliance	1.09	1.32	1.21	0.53	0.76	0.56	18477.58	5968.95	7934.69	1.66	2.06	1.72	0.8	1.17	0.73	24622.18	19874.06	26502.05
14.	Regency	1.42	1.65	1.25	0.51	0.87	0.75	68.02	61.08	57.96	0.9	0.71	0.45	0.55	0.27	0.19	324.62	415.67	401.23
15.	S B & T	3.21	5.89	4.82	1.44	3.1	2.56	121.75	118.33	134.62	1.99	2.63	2.26	1.18	1.31	1.05	149.03	195.77	189.62
16.	Satyam	7.6	7.37	6.05	7.47	7.22	5.93	2593.11	2851.94	3862.13	4.77	0.67	1.09	4.61	0.57	1	6088.6	-1292.1	327.3
17.	SBI	1.3	1.79	1.6	1.24	1.7	1.55	75062.85	14615.88	22006.66	1.45	1.58	1.35	1.4	1.53	1.3	54464.52	61418.98	41824.23
18.	Texmaco	1.48	2.15	1.96	0.53	1.03	1.24	121.54	41.79	28.41	1.64	1.44	1.32	0.73	0.63	0.7	-19.61	88.26	152.89
19.	TV Today	0.83	0.76	0.79	0.4	0.36	0.33	52.37	-10.34	-8.11	1.36	1.47	1	0.83	0.86	0.53	76.1	69.78	0.11
20.	V I P	1.44	1.16	1.08	0.8	0.35	0.39	115.01	47.09	59.54	1.22	1.18	1.36	0.42	0.53	0.55	152.23	147.24	151.8

Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

APPENDIX E – PROFITABILITY RATIOS OF SELECTED CORPORATE FIRMS MERGED DURING 2007

SI. No.	Acquirer Firms	Prior to Merger												Post Merger											
		NPR			OPR			ROIR			NWR (cores)			NPR			OPR			ROIR			NWR		
		04	05	06	04	05	06	04	05	06	04	05	06	08	09	10	08	09	10	08	09	10	08	09	10
1	3I Infotech	-5.15	11.1	13.8	231.3	577.3	423	-0.42	10.07	10.02	168.1	182.5	367.9	15.19	12.79	1.36	1215	2308	191.3	12.93	12.94	6.13	744.1	1037	993.5
2	Aftek Ltd.	32.25	29.56	33.36	140.8	395.9	211.5	16.68	13.13	12.82	273.1	322.6	480.4	13.8	-3.96	0.17	393.1	315.8	21.15	9.55	-0.35	1.1	621.1	613.3	610.3
3	Aurobindo	6.84	-0.71	4.18	1507	2635	1607	17.02	4.5	10.19	689.2	678.2	814.9	9.31	3.16	15.42	2533	3229	60.94	15.02	8.42	29.29	1124	1241	1829
4	Consolidated	1.73	21142	-618	424.4	49.6	0.7	1.73	4.62	0.04	570.5	551.3	563.7	51133	41867	43033	16.33	16.29	32.54	2.59	2.11	1.95	650.5	698.5	783
5	Coromandel	3.48	4.53	4.42	1213	3081	1869	17.62	22.27	19.19	339.5	396.1	460.7	5.45	5.83	7.25	3839	9714	30.81	24.95	42.3	33.4	795.5	1212	1502
6	Dabur India	8.19	10.17	11.28	1174	2761	1731	39.42	45.32	49.73	286.1	363.9	497.1	13.81	13.69	14.64	2384	2843	94.17	64.26	56.47	64.3	617.6	818.8	935.4
7	Datamatics	26.85	16.52	14.83	106.9	310.1	152	42.96	15.59	12.32	65.79	166.1	175.9	6.36	9.17	8.45	153.4	310.4	31.85	6.63	13.58	11.51	187.4	247.9	239.1
8	Emami Ltd.	9.69	12.94	15.97	200.6	400.8	281.8	31.7	32.44	44.18	279	316.5	334.8	15.31	10.69	6.5	571.4	740.6	19.65	27.36	21.41	19.54	286.4	301.3	626.8
9	Excel Crop	3.12	5.08	5.04	313.6	818.5	414.4	32.7	47.24	43.3	60.06	75.43	93.36	4.55	4.61	5.66	512.4	718.5	8.53	39.18	45.39	37.01	123.5	151.6	179.7
10	Hindalco	11.14	11.74	12.03	8555	20654	12375	16.46	17.75	15.33	7050	7665	9436	3.73	0.58	7.04	60471	67304	-96.9	11.64	2.28	17.17	17147	15763	21571
11	Indian Oil	5.79	3.89	2.65	1E+05	3E+05	2E+05	32.05	19.54	15.77	23952	27450	30641	3.29	0.75	3.92	2E+05	3E+05	2343	20.98	10.75	18.94	43620	45504	52462
12	Phoenix	23.39	27.85	30.37	38.65	84.84	54.08	23.79	18.89	20.35	29.8	37.74	51.77	51.96	76.96	49.78	103.4	148.3	27.93	4.3	5.02	3.79	1285	1515	1605
13	Reliance	8.87	10.34	9.8	52709	1E+05	80806	15.91	18.96	17.67	35018	41094	51028	13.67	9.63	11.5	1E+05	2E+05	3989	19.25	11.11	16.16	83828	1E+05	1E+05
14	Regency	23.17	22.58	21.85	75.15	196.9	132.5	25.48	28.25	5.38	105.5	119.1	342.4	14.9	-7.72	-19.3	355.9	719.2	29.82	6.15	5.98	-1.82	689.6	524.2	374.8
15	S B & T	4.73	0.83	1.24	172.3	370.9	138	9.28	2.88	4.17	84.6	100.4	109.1	-0.99	1.35	1.69	219.4	249.4	15.96	2.74	5.28	7.28	104.6	124.5	121.8
16	Satyam	20.55	20.48	23.97	2696	7222	5124	23.77	25.35	31.06	2654	3298	4317	19.91	-92.5	-2.25	8730	8838	279.1	26.39	4963	-4.55	7239	-880	1881
17	SBI	3408	924.4	527.6	51246	1E+05	59177	69.19	55.1	45.4	27436	32552	37207	164.2	9.97	8.85	89675	1E+05	1020	41.82	46.11	43.6	61236	72390	83136
18	Texmaco	13.57	6.31	4.9	137.4	483.3	371	22.16	15.05	22.24	97.76	126.1	141	7.34	8.54	9.57	841.9	1012	16.79	41.12	37.9	26.56	244.4	312.6	557.6
19	TV Today	15.3	1.6	2.26	65.82	323.2	153.8	313.3	372.8	138.8	-0.75	1.66	4.98	3.03	2.53	3.2	711.2	812.2	49.95	25.77	30.97	26.48	88.95	105.3	194.8
20	V I P	2.17	1.37	1.15	278.4	616.7	331.8	14.18	14.68	15	56.63	58.05	61.15	3.82	-2.46	7.07	576.7	565.9	35.59	28.15	0.3	44.18	127	111.3	146.5

Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

APPENDIX F – OPERATING PERFORMANCE RATIOS OF SELECTED CORPORATE FIRMS MERGED DURING 2007

SI.No.	Acquirer Firms	Prior to Merger (TIMES)												Post Merger											
		DTR			FATR			TATR			WCTR			DTR			FATR			TATR			WCTR		
		04	05	06	04	05	06	04	05	06	04	05	06	08	09	10	08	09	10	08	09	10	08	09	10
1	3I Infotech	2.14	1.82	1.69	1.33	1.33	1.41	0.72	0.71	0.51	1.73	3.22	1.05	1.7	2.23	2.01	1.07	0.95	1.09	0.55	0.58	0.63	1.71	2.44	2.65
2	Aftek Ltd.	4.05	3.64	2.17	3.03	6.65	1.71	0.52	0.42	0.36	0.81	0.54	0.53	3.1	1.47	1.28	0.63	0.76	0.53	0.33	0.3	0.25	0.95	0.53	0.51
3	Aurobindo	2.81	2.49	2.27	1.8	1.27	1.37	0.86	0.66	0.63	1.67	2.06	1.67	2.75	2.63	2.88	0.59	1.63	1.6	0.41	0.75	0.76	1.67	1.85	2.05
4	Consolidated	5.05	0.08	0.01	9.12	0.01	0.02	0.68	0.02	0.01	3.15	0.08	0.01	0.07	0.02	0.03	1485	0.07	0.01	0.06	4.32	3.84	0.05	0.04	0.02
5	Coromandel	4.39	4.9	3.55	3.18	4.07	5.12	1.22	1.45	1.25	2.54	7.61	5.19	5.55	8.3	8.44	0.19	12	6.72	0.26	1.98	1.38	5.2	8.95	4.15
6	Dabur India	9.85	10.3	13.1	5.33	5.23	3.71	1.86	1.65	1.86	3.98	-471	59.8	9.21	11.1	14.7	0.19	5.09	5.06	0.32	1.53	1.68	68.3	20.2	19.5
7	Datamatics	3.45	3.04	2.4	3.99	5.51	4.3	1.09	0.8	0.7	2.45	3.79	2.81	2.31	2.56	2.19	0.27	3.57	2.91	0.19	0.95	0.92	3.02	3.44	2.69
8	Emami Ltd.	3.35	3.68	4.02	0.95	1.03	1.52	0.66	0.6	0.75	2.27	2.73	3.88	2.54	4.95	5.71	0.16	1.18	1.83	0.16	0.82	0.98	2.92	13.1	4.02
9	Excel Crop	3.4	4.29	4.29	5.75	7.17	6.1	1.41	1.69	1.69	1.89	4.08	4.16	3.47	4.13	3.09	0.16	7.41	6.04	0.24	1.73	1.36	3.4	3.68	2.99
10	Hindalco	5.96	6.6	5.88	1.12	1.27	1.33	0.66	0.66	0.63	2.45	5.31	3.43	7.22	7.2	6.46	0.6	1.95	1.77	0.51	1.04	0.89	14.8	23.2	12.3
11	Indian Oil	14.5	13.7	18.7	3.91	3.82	4.59	1.89	1.79	1.9	3.96	12.5	14.4	13	16.7	11.7	0.18	5.48	4.09	0.34	2.17	1.67	11.3	27.8	14.4
12	Phoenix	1.45	1.59	2.01	0.62	0.43	0.34	0.35	0.28	0.25	1.09	-35.8	-2.15	0.62	0.6	0.84	10.1	0.07	0.07	0.45	0.04	0.04	-0.88	0.49	6.55
13	Reliance	5.18	6.1	8.1	1.6	2.09	1.39	0.78	0.9	0.93	3.05	12.3	11.5	5.2	10.7	10.9	0.79	0.86	1.19	0.65	0.63	0.81	5.8	7.83	7.98
14	Regency	2.34	1.14	0.81	0.99	1.21	0.39	0.51	0.45	0.12	1.16	1.67	2.2	0.74	1.41	1.43	2.85	0.63	0.52	0.52	0.39	0.33	0.99	1.69	1.92
15	S B & T	3.97	3.48	1.78	19.1	13.3	7.02	1.29	1.11	0.68	1.4	1.56	1.02	1.81	2.27	2.38	0.08	12.2	14.6	0.07	0.85	0.9	1.47	1.25	1.34
16	Satyam	3.33	3.82	3.27	8.33	9.31	8.6	0.85	0.94	0.93	0.98	1.23	1.24	2.79	3.84	3.06	0.15	7.13	5.56	0.14	2.18	0.98	1.39	-6.84	16.8
17	SBI	0.08	0.02	0.03	0.04	0.16	0.26	0.05	0.01	0.03	0.02	0.04	0.04	0.11	0.02	0.03	0.9	1.34	1.38	0.01	0.01	0.01	0.1	0.01	0.03
18	Texmaco	2.36	3.05	2.73	1.74	3.11	3.88	0.55	0.8	1.1	1.14	6.01	13.9	4.56	3.58	2.99	0.23	3.89	4.21	0.34	1.12	0.97	-48.2	10.1	6.39
19	TV Today	2.85	7.96	8.31	3.67	9.28	8.13	0.99	2.49	2.33	1.36	-16.8	-20.7	6.52	8.79	9.83	0.05	23.8	17.7	0.14	3.18	2.22	9.5	11.7	9253
20	V I P	4.37	6.74	6.19	4.44	4.8	4.46	1.54	1.43	1.54	2.65	7.21	5.96	4.49	4.29	5.91	0.15	6.32	8.36	0.23	1.57	1.88	3.94	3.94	4.5

Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package

APPENDIX G – FINANCIAL RISK RATIOS OF SELECTED CORPORATE FIRMS MERGED DURING 2007

SI.No.	Acquirer Firms	Prior to Merger									Post Merger								
		DER			ICR			TB&E_EBITD			DER			ICR			TB&E_EBITD		
		04	05	06	04	05	06	04	05	06	08	09	10	08	09	10	08	09	10
1	3I Infotech	0.57	0.81	0.91	-1.26	2.92	8.29	1.82	1.64	1.08	1.75	2.23	2.3	4.87	3.92	2.85	0.84	0.93	0.06
2	Aftek Ltd.	0.13	0.4	0.12	141.28	138.66	119.22	14.06	1.36	2.82	0.13	0.15	0.19	63.51	35.35	1.53	3.93	2.76	0.13
3	Aurobindo	1.28	1.58	1.69	5.53	1.3	1.96	1.68	1.2	1.13	1.7	1.89	1.18	5.6	2.44	12.76	1.29	1.34	0.01
4	Consolidated	2.83	0.49	0.74	11.55	15.87	7.58	9.96	0.89	0.3	1.38	2.36	2.84	1503	1508	1519	0.5	0.5	1
5	Coromandel	0.84	0.64	0.86	3.51	5.95	5.9	3.96	5.61	4.42	1.2	1.38	1.3	5.68	10.79	9.7	3.89	5.69	0.01
6	Dabur India	0.43	0.4	0.22	12.34	22.58	22.55	7.94	8.03	10.69	0.16	0.28	0.19	33.8	26.34	91.86	12.87	8.99	0.33
7	Datamatics	0.14	0.49	1.38	42.99	198.46	218.93	4.22	7.64	7.45	0.01	0.04	0.02	38.85	45.53	99.26	7.49	8.02	0.88
8	Emami Ltd.	1.02	0.43	0.33	112.55	16.68	36.26	3.82	4.35	6.47	0.43	1.46	0.4	11.7	2.95	2.84	4.18	1.63	0.05
9	Excel Crop	1.71	1.27	0.95	2.54	5.92	5.15	3.09	4.22	4.43	1.01	0.98	0.81	4.87	4.09	7.15	3.93	4.65	0.03
10	Hindalco	0.53	0.64	0.66	7.09	8.07	7.13	2.23	2.05	1.94	1.89	1.8	1.11	2.48	0.48	5.93	1.85	2.35	0.03
11	Indian Oil	0.63	0.74	0.98	21.57	10.73	6.37	7.25	6.22	5.42	0.89	1.04	0.94	7.76	1.74	9.54	5.81	6.01	0.04
12	Phoenix	2.84	2.83	2.36	6.74	8.87	6.26	0.73	0.55	0.49	0.24	0.36	0.41	15.19	18.47	9.84	0.31	0.25	0.04
13	Reliance	0.66	0.49	0.51	5.22	7.18	12.4	2.33	3.33	3.25	0.63	0.7	0.49	22.18	11.07	14.98	2.66	1.97	0.04
14	Regency	0.14	0.23	1.38	22.56	23.82	27.51	3.15	2.57	0.26	1.34	2.47	5.05	3.95	0.49	-0.23	0.37	0.54	0.01
15	S B & T	0.28	0.42	0.49	15.17	2.24	1.26	4.57	3.24	1.96	0.68	0.8	0.76	2.53	1.73	1.68	2.51	2.15	0.15
16	Satyam	0.01	0.01	0.02	3727.6	11927	568.57	37.24	43.62	30.48	0.03	-0.92	0.02	141.14	-53.16	-7	24.88	9.34	0.84
17	SBI	0.81	0.86	1.24	1.32	1.33	1.31	2.32	1.87	1.26	1.6	1.45	1.47	1.29	1.28	1.28	0.9	1.05	0.05
18	Texmaco	0.91	0.5	0.49	2.18	4.59	6.72	1.82	3.84	5.36	0.29	0.23	0.21	12.12	11.12	17.22	10.93	10.34	0.09
19	TV Today	-1.88	-2.36	-10.96	0.09	1.98	2.09	2.49	6.11	5.85	0.36	0.15	0.05	5.77	11.95	47.24	17.11	20.07	0.84
20	V I P	2.13	1.8	1.82	2.24	2.11	2.09	2.47	3.1	2.98	1.14	1.34	0.6	2.78	-0.74	7.04	3.64	3.44	0.24

Source: Complied & edited from the financial statements of selected firms listed-CMIE-prowess package.

AN EMPIRICAL ANALYSIS OF SEMI-MONTH AND TURN OF THE MONTH EFFECTS IN INDIAN STOCK MARKET

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ABSTRACT
The efficiency of the capital market raises various issues all over the world. Earlier research studies give evidence that the capital markets are informational efficient and hence, cannot outperform the market consistently on the basis of price change predictions. However, some researchers have also brought into light seasonal effects/calendar anomalies in the developed markets. This paper investigates one such anomaly (Semi-month and Turn of the month effects) in an emerging Indian Capital Market. The S&P CNX Nifty and BSE Sensex Index data have been collected and analyzed for a period of six years from 1st January 2005 to 31st December 2010. The analysis of the study found that the semi-month and turn of the Month Effect not exists in Indian Stock Market during the study period.

KEYWORDS
Capital Market, Seasonal effects / Calendar Anomalies, Monthly Effects, Semi-month Effect, Turn of the Month Effect.

INTRODUCTION
Efficient Market Hypothesis (EMH) is one of the highly researched areas of financial economics. One of the significant anomalies of EMH is seasonal effect. It is worth nothing that testing for a seasonal effect in monthly returns has been given considerable attention in the financial literature. The existence of seasonal effect negates the weak form of the EMH and it implies market inefficiency. Several research studies and tests investigated the seasonal behavior of monthly stock market returns on all forms of EMH. Some cross sectional differences among stock returns were found to occur with regularity. These regularities in the stock returns have been termed as Anomalies. An investigation in to these anomalies can be used to frame investment strategy to outperform a naïve buy and hold strategy. The different patterns identified in stock returns include the January Effect, Day of The Week Effect, different monthly effect like Turn of the Month Effect, Semi Month Effect, the End of the Month Effect, etc.

REVIEW OF LITERATURE
A brief review of select studies has been presented here to identify research gap and understand methodologies employed in the research area of Calendar Anomalies. **Harvinder Kaur (2004)** analyzed the nature and characteristics of stock market volatility in India and the US. The study found that the response to news arrival was asymmetrical, meaning that the impact of good and bad news was not the same. The return and volatility on various weekdays have somewhat changed after the introduction of Rolling Settlement. There was mixed evidence of return and volatility spillover between the US and Indian Markets. **B. S Badla & Kiran Jindal (2006)** investigated one of the anomalies by segmenting pre and post rolling settlement. The result of this study found that the returns of the month effect and semi monthly effect were prevalent in the Indian Stock Market. **Guneratne B Wickremasinghe (2007)** using the sample of 75 companies from Colombo Stock Exchange (CSE), found that there were no statistically significant differences among the returns for different days of the week. The analysis of this study indicates that the returns for the Month of January were not different from that of other months of the year. The study found that daily and monthly patterns of returns cannot be used to devise any method to profit from trading in shares in the Colombo Stock Exchange (CSE) **Hareesh Kumar.V and Malabika Deo(2007)** analyzed the efficiency of Indian Stock Market by using S&P CNX 500 Index. They discovered the presence of Day of the Week Effect in the Indian Stock Market, which affected both the stock returns and volatility, thereby proving the Indian Stock Market to be inefficient. **Ushad Subadar Agathee (2008)** found the average returns of Stock Exchange of Mauritius (SEM) to be the lowest in the Month of March and Highest in the Month of June. The equality of means-return tests shows that returns are statistically the same across all months. The regression analysis reveals that returns are not independent on the months of the year, except for January. **Khokan Bepari and Abu Taher Mollik (2009)** investigated the existence of seasonality in return series of DSE of Bangladesh. The study confirmed the existence of seasonality in stock returns in DSE but did not support the tax loss selling hypothesis. The study found that there was an April Effect in DSE and invalidated the paradigm of the efficient market hypothesis in DSE. **Selvarani.M and Leena Jenefa (2009)** analyzed the trends in annual returns and daily returns. A set of parametric and non-parametric tests were employed to test the equality of mean returns and standard deviations of the returns. It was found that in the NSE, there was strong evidence of April and January Effect. After the introduction of the Rolling Settlement, Friday had become significant. As far as the Day Effect was concerned, Tuesday Effect was more prevalent than Monday Effect. **Nageswari.P and Selvam.M (2010)** examined the Day-of-the Week Effect on the Indian Stock Market after the introduction of the Compulsory Rolling Settlement. It was found that the Mean Returns were positive for all days of the week, highest being on Friday for all the indices and the Day of the Week Pattern did not appear to exist in the Indian Stock Market. **Nageswari.P, Selvam.M and Karpagam.V(2011)** examined the existence of Semi-month Effect in Indian Stock Market. The study found that that the mean returns in the first half calendar month was lower than the mean returns in the second half calendar month during the study period. The paper reports an insignificant semi-monthly effect across all years except for 2005-06.

The above literature provides an overview of the presence of Monthly Effects in various Stock Markets. An attempt has been made in this study to analyze the **"Analysis of Semi-Month and Turn of the Month Effects in Indian Stock Market"** by taking the model from the above study.

STATEMENT OF THE PROBLEM

The corporate, firms and Government generally release good and bad news between First half month and last half Month respectively. As a result, the bad news is reflected in lower the stock prices and good news is reflected in higher stock prices. When new positive information reaches the market, the prices become bullish due to buying pressure. The active trading strategies, based on the knowledge of market anomalies, would provide benefits to the investors; but the countervailing arbitrage will also exploit the excess return over time. In the process, observed anomalies will eventually disappear and pave the way to make the market more efficient In general, there has been little published work on seasonalities in the Indian Stock Market. The previous researchers on the Indian Stock Market done anomalies related to day of the week or month of the year. To the author's knowledge, there has not been any published article on the semi-month and Turn of the Month effect in Indian context. In this environment, it is necessary to study the Semi-Month and turn-of the Month Effects in Indian Stock Market is significant.

NEED OF THE PRESENT STUDY

The capital flows are taking place on a massive scale to India in order to capitalize the promising profitable opportunities. The international investors are concerned with the market efficiency, timing of investment, and the market integration with other developed countries. The present study would be useful to the investors, traders and arbitrageurs who could formulate profitable trading strategies if they were able to predict the share price behavior with full information on these anomalies. The share price behavior in one market spreads slowly to the other developing and developed markets. Since the presence of Calendar Anomalies in these markets was proven, these anomalies should be investigated in India. Such detailed investigation of the Calendar Anomalies like Day-of- the Week Effect, Turn-of-the Month Effect and Monthly Effect in the Indian Markets would help the international and Indian investors to plan their investment.

OBJECTIVES OF THE STUDY

The present study intends to accomplish the following objectives

- To identify the Turn of the Month Effect in the Indian Stock Market.
- To measure the Semi-Month Effect prevalent in the Indian stock market.
- To summarize the findings, Suggestions and Conclusions.

HYPOTHESIS OF THE STUDY

The following two hypotheses were tested in this study.

NHo1: There is no significant difference between the returns of the first half month and rest of the month.

METHODOLOGY OF THE STUDY

A) SAMPLE SELECTION

For the purpose of this study, S&P CNX Nifty and BSE Sensex Index were considered as sample since these two indices are important indices of the Indian Stock Market in India. Besides, these indices are considered to be the best indicators of the performance of the whole economy. Hence, this study considered these Indices.

B) SOURCES OF DATA

The required information for the present study were the daily closing prices of S&P CNX Nifty Index and BSE Sensex and they were collected from the Prowess, which is a corporate database maintained by CMIE.

C) PERIOD OF THE STUDY

The present study covered a period of Six-years from 1st January 2005 to 31st December 2010.

SEMI-MONTH EFFECT

In the case of the semi-monthly effect, the mean return of the first half month has been compared with the average return of the rest of the days. For the purpose of this study, the return of first 15 days (1-14 days of the current month and 30th &31st days of the preceding month) have been compared with rest of the month.

TURN OF THE MONTH EFFECT

The tendency of stock prices to increase during the last two days and the first three days of each month, is called Turn of the Month Effect. For the purpose of this study, the average of the return on last two trading days of the month, and the first three days of the subsequent month has been computed and compared with the mean return for the rest of the days in the subsequent month.

TOOLS USED FOR ANALYSIS

In this study, independence of return series was investigated for Nifty and Sensex Index. The following were calculated,

i)Returns

To compute daily returns for each of the index series as the continuously compounded daily percentage change in the Closing value index as given below:

$$R_t = \ln\left[\frac{I_t}{I_{t-1}}\right]*100$$

Where,

R_t = Daily return on the Index (I),

ln = Natural log of underlying market series (I),

I_t = Closing value of a given index (I) on a specific trading day (t), and

I_{t-1} = Closing value of the given index (I) on preceding trading day (t-1).

ii) Mean

Mean is the average value of the series, obtained by adding up the series and dividing by the number of observations. It is the most common measure of central tendency.

$$Mean = \frac{1}{n}\sum_{i=1}^{n} X_i$$

Where,

$\bar{x}$ = represents the mean.

$\sum$ = Symbol of Summation

Xi =Value of the i[th] item x, i= 1, 2, 3 ….n

n=total Number of items

iii) T -Test

The *t*-test compares the actual difference between two means in relation to the variation in the data (expressed as the standard deviation of the difference between the means).

$$t = (\overline{X} - \overline{Y})\sqrt{\frac{n(n-1)}{\sum_{i=1}^{n}(\hat{X}_i - \hat{Y}_i)^2}}.$$

$$\hat{X}_i = (X_i - \overline{X}),\ \hat{Y}_i = (Y_i - \overline{Y}).$$

Where,

X_i and Y_i are paired sets, n = number of years.

iv) OLS Regression Model

In order to test the equality of mean returns across halves of calendar months, the following ordinary least squares (OLS) regression is run for the period 2005 to 2010:

Rt = *B*1+ *B*2*D*1*t* + *ut*

where *D*1*t* = 1 if day *t* is in the second half of a calendar month (exclusive of the fifteenth day of a month), and 0 otherwise. The OLS coefficient *B*1 is the mean returns corresponding to the first half of calendar months while the estimate of *B*2 is equal to the difference between the sample means of the first and second halves of calendar months. The stochastic disturbance term is indicated by *ut*. The null hypothesis to be tested is: *B*2 *= 0*

ANALYSIS OF SEMI-MONTH AND TURN OF THE MONTH EFFECTS IN SELECTED SAMPLE INDEX RETURNS

For the purpose of the analysis, the Semi-month and Turn of the month Effect in Index returns were classified as follows,

A. Analysis of BSE Sensex Index returns for the period from January 2005 to December 2010

1. Analysis of Semi monthly Effect in BSE Sensex Returns
2. Results of OLS Regression Model of Semi-month Effect
3. Analysis of Turn of the month Effect BSE Sensex Returns, and
4. Results of OLS Regression Model of Turn of the month Effect

B. Analysis of S&P CNX Nifty Index Returns for the period from January 2005 to December 2010

5. Analysis of Semi monthly Effect in S&P CNX Nifty Returns.
6. Results of OLS Regression Model of Semi-month Effect
7. Analysis of Turn of the month Effect in S&P CNX Nifty Returns, and
8. Results of OLS Regression Model of Turn of the month Effect

A. ANALYSIS OF BSE SENSEX INDEX RETURNS FOR THE PERIOD FROM JANUARY 2005 TO DECEMBER 2010

1. ANALYSIS OF SEMI MONTHLY EFFECT IN BSE SENSEX RETURNS

The analysis of semi-month effect in BSE Sensex index returns from January 2005-December 2010 is presented in **Table-1**. The analysis clearly shows that there was highest (0.0967) mean return recorded for the first half month than the Second half (0.0465). This indicates that the corporate may announce the positive information during the first half month period. The highest value (1.9244) and lowest value (1.7545) of standard deviation recorded for the second and first half month respectively. The highest value of standard deviation with lowest mean return revealed there was non-linear relationship between the return and risk in BSE Sensex returns during the study period.

The peak of return distribution was platykurtic for the first half and leptokurtic for the second half month returns and highest (9.96) for the second half of the return series. The return was negatively skewed for first half month and positively skewed for second half month returns during the study period. The t-test statistic value is less than the t critical value both one and two tail test and the p-value shows that there was no significant difference between the returns of first half and rest of the days of the month. It is observed that the semi-month effect does not exist in BSE Sensex index returns during the study period. Hence, the null hypothesis (NHo1), namely, "There is no significant difference between the returns of the first half month and second of the month," is accepted.

TABLE -1: ANALYSIS OF SEMI MONTHLY EFFECT IN BSE SENSEX FOR THE PERIOD FROM 01.01.2005-31.12.2010

Statistics	First Half	Second Half
Mean	0.096753	0.046561
Standard Deviation	1.754554	1.924416
Kurtosis	2.630503	9.962015
Skewness	-0.22093	0.354016
Observations	821	667
df	1486	
t Stat	0.525405	
P(T<=t) one-tail	0.29969	
t Critical one-tail	1.64588	
P(T<=t) two-tail	0.59938	
t Critical two-tail	1.961562	

Source: Computed from PROWESS

2. ANALYSIS OF OLS REGRESSION MODEL OF SEMI-MONTH EFFECT IN BSE SENSEX RETURNS

Table-2 shows the results of OLS Regression Model of semi-month Effect in BSE Sensex returns for the period of 1[st] January 2005 to 31[st] December 2010. The above table clearly revealed that the there was negative coefficient and t-statistic value recorded for the second half month and positive coefficient and t-statistic value recorded for the first half month return during the study period. The insignificant p-value found that there was no significant difference between the first half and rest of the days of the month. . R2 is 0.00018 which is very low, and F-statistic indicates that the overall fit of the model is poor. Further, Durban-Watson statistic of 1.96 indicates autocorrelation in the residuals.

TABLE-2: RESULTS OF OLS REGRESSION MODEL OF SEMI-MONTH EFFECT IN BSE SENSEX RETURNS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Second Half	-0.0131	0.0380	-0.3457	0.7297
C	0.0788	0.0730	1.0798	0.2806
Adjusted R-squared	0.00018	F-statistic		0.1195
Durbin-Watson stat	1.9668	Prob(F-statistic)		0.7297

Source: Computed from PROWESS

3. ANALYSIS OF TURN OF THE MONTH EFFECT IN BSE SENSEX RETURNS

The analysis of Turn of The Month Effect in BSE Sensex Returns for the period from January 2005 to December 2010 is given in **Table-3**. The results indicate that the index returns on first half (0.2414) was higher than that of second half (0.0248). The value of standard deviation of the return was 1.7312 in the first half. But in the second half, it (1.8592) was higher than that of the first half. This shows that there was inverse relationship between risk and return of the series. That is high return was associated with low risk.

The high and positive t-statistic value found that there was significant difference between the returns of first half and rest of the days of the month at 5% significant level. The present study identified the Turn of The Month Effect in the Indian Stock Market during the study period. Hence, the null hypothesis (NHo1), namely, "There is no significant difference between the returns of the first half month and rest of the month," is rejected

4. ANALYSIS OF OLS REGRESSION MODEL OF TURN OF THE MONTH EFFECT

The results of OLS Regression Model of Turn of the month Effect in BSE Sensex returns for the period of 1st January 2005 to 31st December 2010 is exhibited in **Table-4**. The table shows that the coefficient and t-statistic value of the first half month return was higher than that of the rest of the days of the month. The first half month return significantly different from zero at 1% level during the study period. The significant p-value found that there was significant difference between the first half and rest of the days of the month. . R-squared is very low, and F-statistic indicates that the overall fit of the model is poor. Further, Durban-Watson statistic of 1.97 indicates autocorrelation in the residuals.

TABLE -3 ANALYSIS OF TURN OF THE MONTH EFFECT IN BSE SENSEX DURING 2005-2009

Statistics	First Half	Second Half
Mean	0.2414831	0.0248252
Standard Deviation	1.7312173	1.8592363
Kurtosis	2.6612443	7.6423191
Skewness	-0.270817	0.1700481
Observations	359	1130
df	1487	
t Stat	**1.9543055***	
P(T<=t) one-tail	0.0254261	
t Critical one-tail	1.645879	
P(T<=t) two-tail	0.0508523	
t Critical two-tail	1.9615606	

Source: Computed from PROWESS

*Significant at 5% level

TABLE-4: RESULTS OF OLS REGRESSION MODEL OF TURN OF THE MONTH EFFECT IN BSE SENSEX RETURNS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Second Half	0.0430	0.0644	0.6673	0.5050
C	0.2359*	0.0914	2.5808	0.0103
R-squared	0.001245	F-statistic		0.4453
Durbin-Watson stat	1.9708	Prob(F-statistic)		0.5050

Source: Computed from PROWESS

*Significant at 5% level

B. ANALYSIS OF S&P CNX NIFTY INDEX RETURNS

5. ANALYSIS OF SEMI MONTHLY EFFECT IN S&P CNX NIFTY INDEX RETURNS

The analysis of Semi-Month Effect of S&P CNX Nifty Index for the period of January 2005 to December 2010 is given in **Table-5**. The mean returns of first half (0.0937) was higher than that of the second half month (0.0460). But, the standard deviations of return series were 1.707 for the first half and 1.966 for the second half month. The peak of the return distribution was platykurtic for the first half month and leptokurtic for the second half month return series. Highest kurtosis (11.00) recorded for the second half month return series indicates the non normality of the return distribution. The return distribution positively skewed for second half and negatively skewed for the first half month returns.

The lowest and insignificant t-test statistic value reveal that there was no significant difference between the returns of first half and second half month returns series. . Hence, the null hypothesis (NHo1), namely, "There is no significant difference between the returns of the first half month and rest of the month," is accepted.

TABLE -5: ANALYSIS OF SEMI MONTHLY EFFECT IN S&P CNX NIFTY INDEX DURING 2005-2009

Statistics	First Half	Second Half
Mean	0.093736	0.046064
Standard Deviation	1.707764	1.965942
Kurtosis	2.201344	11.00796
Skewness	-0.30031	0.171453
Observations	823	666
Df	1487	
t Stat	0.500101	
P(T<=t) one-tail	0.308539	
t Critical one-tail	1.645879	
P(T<=t) two-tail	0.617078	
t Critical two-tail	1.961561	

Source: Computed from PROWESS

6. ANALYSIS OF OLS REGRESSION MODEL OF SEMI-MONTH EFFECT IN S&P CNX NIFTY INDEX RETURNS

Table-6 shows the OLS Regression results of Semi-month effect in S&P CNX Nifty index returns for the period of January 2005 to December 2010. The co-efficient value and t-statistic value of the first half month return was positive but the second half month return and t-statistic value was recorded negative co-efficient value. The insignificant F-value showed that there was no significant difference between the returns first half and rest of the days of the month.

TABLE-6: RESULTS OF OLS REGRESSION MODEL OF SEMI-MONTH EFFECT IN S&P CNX NIFTY INDEX RETURNS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Second Half	-0.0084	0.0360	-0.2346	0.8146
C	0.0694	0.0708	0.9801	0.3273
R-squared	0.00014	F-statistic		0.0550
Durbin-Watson stat	1.9968	Prob(F-statistic)		0.8145

7. ANALYSIS OF TURN OF THE MONTH EFFECT IN S& P CNX NIFTY INDEX RETURNS

The analysis of the Turn of the Month Effect in S&P CNX Nifty Index for the study period from January 2005 to December 2010 is presented in **Table-7**. It is understood that the S&P CNX Nifty Index returns of the first half (0.2302) was higher than that of the second half (0.0238) but the standard deviation of the return in the first half was lower (1.69) than that of the second half (1.867). It indicates that the market was more volatile for the second half month and least volatile for the first half month return during the study period. The kurtosis measure of the return distribution was platykurtic for the First half month return and leptokurtic for the second half month return. It is found that the return was normally distributed for the first half month only. The return distribution was negatively skewed for the first half month and positively skewed for the second half month return during the study period. The t-test statistic value was significant at 5% level on one tail test. It indicates that the Turn of the Month Effect exists in S&P CNX Nifty Index returns during the study period.

TABLE -7: ANALYSIS OF TURN OF THE MONTH EFFECT IN S& P CNX NIFTY INDEX DURING 2005-2009

Statistics	First Half	Second Half
Mean	0.230213	0.023849
Standard Deviation	1.690917	1.866582
Kurtosis	2.103058	8.703816
Skewness	-0.41222	0.055134
Observations	359	1130
Df	1487	
t Stat	**1.865013***	
P(T<=t) one-tail	0.031188	
t Critical one-tail	1.645879	
P(T<=t) two-tail	0.062376	
t Critical two-tail	1.961561	

Source: Computed from PROWESS

*Significant at 5% level

8. ANALYSIS OF OLS REGRESSION MODEL OF TURN OF THE MONTH EFFECT IN S&P CNX NIFTY INDEX RETURNS

The OLS Regression results of Turn of the month effect in S&P CNX Nifty index returns for the period from January 2005 to December 2010 is shown in **Table-8**. The table examined the insignificant positive co-efficient value and t-statistic value recorded for the second half month return and high positive significant co-efficient and t-test statistic value recorded for the first half month return. The first half month return was significant at 5% level. It found that there was significant difference between the returns first half and rest of the days of the month. But the insignificant F-value revealed that there did not find any seasonality for the S&P CNX Nifty index returns during the study period.

TABLE-8: RESULTS OF OLS REGRESSION MODEL OF TURN OF THE MONTH EFFECT IN S&P CNX NIFTY INDEX RETURNS

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Second half	0.0208	0.0619	0.3367	0.7365
C	0.2271	0.0892	2.5439*	0.0114
R-squared	0.000232	F-statistic		0.1134
Durbin-Watson stat	2.0111	Prob(F-statistic)		0.7364

Source: Computed from PROWESS

*Significant at 5% level

FINDINGS AND SUGGESTIONS OF THE STUDY

The following are the major findings of the study

- The analysis of the selected indices (BSE Sensex and S&P CNX Nifty) showed that highest mean returns was recorded for the first half month than the rest of the days of the month. The one of the possible reason may be the salaried people who get and invest their salaries during this period.
- So it is suggested that the investors should invest either on the first or last trading days of the month. It will give better returns than the other trading days of the month.
- The study found out the the highest value and lowest value of standard deviation recorded for the second and first half month respectively for both the selected indices.
- The highest value of standard deviation with lowest mean return found out that there was non-linear relationship between the return and risk in selected indices returns during the study period.
- The peak of the return distribution was platykurtic for the first half month and leptokurtic for the second half month return series.
- It indicates that the return distribution normally distributed for the first half month return and non- normality of the second half month return series of the selected sample indices during the study period.
- The return distribution is positively skewed for second half month and negatively skewed for the first half month returns for both the BSE Sensex and S&P CNX Nifty index during the study period.
- The t-test statistic value is less than the t critical value for both one and two tail test and the p-value shows that there was no significant difference between the returns of first half and rest of the days of the month. Hence, Semi Monthly Effect did not exist in Indian Stock Market.
- It is found that the semi-month effect does not exist in BSE Sensex and S&P CNX Nifty index returns during the study period.
- The analysis of the Turn of The Month Effect shows that there was significant difference between the returns of the first and the second half return series.
- But the insignificant F-value revealed that there did not find any seasonality for the selected sample index returns during the study period.
- The study found that there was inverse relationship between risk and return of the series. That was high (low) return was associated with lower (high) risk.

CONCLUSION

This paper examined the existence of Semi-month and Turn of the Month Effect (a calendar anomaly) for S&P CNX Nifty and BSE Sensex in the Indian Stock Market. The finding of the Study shows that the Semi-month and Turn of the Month Effect was not prevalent in the Indian Stock Market during the study period. By analyzing these anomalies in Indian Stock Market, it is concluded that most of the cash flows come in to the Indian Stock Market in the first few days of the month, which induces stock prices to move upward. Hence, the Indian Stock Market cannot be treated as fully efficient till now. The existence of these anomalies may provide opportunities to formulate profitable trading strategies so as to earn the abnormal return.

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PHYSICAL INFRASTRUCTURE FACILITIES FOR AGRICULTURAL MARKETING IN HARYANA: A CASE STUDY OF SIRSA DISTRICT

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ABSTRACT
An efficient regulated agricultural marketing system helps in optimization of resource use, output management, increase in farm incomes, widening of markets, growth of agro-based industry, addition to national income through value addition, and employment creation. And the structure, conduct and performance of the Regulated Markets are affected by the availability of marketing infrastructure. Furthermore, at present the need for these market infrastructures has increased due to increased production and marketed surplus. With keeping in view the importance of physical infrastructure facilities in regulated agricultural markets, an attempt has been made in the present paper to examine the availability of physical infrastructure facilities in regulated markets in Sirsa District of Haryana. The results of the study are based on the primary data collected from farmers through pre-tested open ended questionnaire as well as secondary data taken from Haryana State Agricultural Marketing Board and Agricultural Department of Haryana. The study reported that the condition of the infrastructure facilities in the selected mandi yard is not very good. The physical infrastructure facilities are available to a very small number of the farmers as well as they are not in good condition.

KEYWORDS
Agriculture, Marketing, Haryana, Sirsa.

INTRODUCTION
In India, the organized marketing of agricultural commodities has been promoted through a network of regulated markets. Most state governments and UT administrations have enacted legislations for the regulation of agricultural produce markets. Keeping in view the overall interest of the farming community and the ultimate consumers, the regulated markets are considered responsible institutions in discharging all the functions connected with the sale of outputs these institutions are meant to regulate unethical trading practices followed in the marketing of agricultural produce. This would help in protecting the interest of both the producers and consumers, thus it contributes towards the growth of orderly marketing and price stability through effective competition. Therefore, governments from time to time brought about the required legislation and development of market infrastructure.

The agricultural marketing infrastructure may include physical, Functional and Institutional infrastructure. In the recent year physical Infrastructures facilities such as market yard, platform for display of commodities, open auctioning platforms, shop-cum-godowns, drinking water, weighing equipments etc., in the regulated markets were developed. The physical infrastructure facilities were developed in the markets with an expectation that, this will attract more arrival in the market yards, reduce marketing costs, and increase realization of price to growers, by increasing the competition. These days, the need for these market infrastructures has also increased due to increased production and marketed surplus. A marketing system backed up by strong and adequate infrastructure is needed not only for the performance of various marketing functions and expansion of the size of the market but also for transfer of appropriate price signals leading to improved marketing efficiency. The building up of new market complexes with all modern amenities is supposed to influence the market structure and pricing mechanism.

The present paper an attempt has been made to examine the availability of physical infrastructure facilities in the market yard of *Mandi* Dabwali, Sirsa district of Haryana.

DATA SOURCE AND METHODOLOGY
The study is pertained into Sirsa district of Haryana as district Sirsa was ranked first on the basis of maximum production of wheat in Haryana (*Agricultural Department of Haryana, Rabi 2006-07*)

To meet the objectives of the paper, both the primary and secondary data (*for the year 2006 to 2008*) have been used. The secondary data for the market arrival, market details and other necessary information regarding production and trends of wheat HSAMB (*Haryana State Agricultural Marketing Board*) and Agricultural Department of Haryana. The information regarding the physical infrastructure facilities in regulated markets is obtained from the HSAMB (*Haryana State Agricultural Marketing Board*) and a list of these facilities are attached in the table (1.1) For the purpose of collecting primary data, a multistage sampling technique has been used. District Sirsa was selected on the basis of production of wheat. From the selected district Sirsa, *Mandi* Dabwali regulated market has been selected on the basis of maximum arrivals of wheat in *mandi* yards (*Haryana State Agricultural Marketing Board 2007-08*) in second stage. In third stage, two villages Dabwali (4 km) and Desujodha (10 km) have been selected on the basis of distance from *Mandi* Dabwali Regulated Market as they served by selected market.

To collect the required information from farmers about the accessibility physical infrastructure facilities in selected *mandi* yard, one set of open ended questionnaire schedule was structured and pre-tested before final survey. For the purpose of collecting information from all categories of farmers, the farmers were divided into three categories on the basis of their land holding (i.e. small 0-2 Acer, medium 2-5 Acer, large 5 – more Acer) and 60 farmers (20 from each selected categories) were randomly selected from each selected village, a total sample of 120 farmers (40 from each size group) is interviewed. To analysis the data, statistical tools like simple average, ratio and percentage is used.
To improve the market efficiency and standard HSAMB (*Haryana State Agricultural Marketing Board*) claimed that the following physical infrastructural facilities are provided in each regulated markets, i.e.

TABLE 1.1

a) Agriculture business information centre
b) Boundary wall
c) Check post and gates
d) Common auction platform
e) Covered platform
f) Individual platform
g) Shop and booth
h) Weight bridge
i) Service and link roads
j) Food storage godowns
k) Kisan rest house
l) Light arrangement
m) Parking place
n) Fire fighting station
o) Sulabh sauchalya
p) Drinking water facilities
q) Canteen
r) Provision for petrol / diesel pump

RESULTS AND DISCUSSIONS

Percentage and absolute number of sample farmers who enjoys these facilities in *Mandi* Dabwali, Sirsa are revealed by the following table.

TABLE -1.2: ACCESSIBILITY OF PHYSICAL INFRASTRUCTURAL FACILITIES FOR FARMERS, REGULATED MARKET *MANDI* DABWALI, SIRSA (No. of farmers in absolute figure)

Physical infrastructural facilities	Small farmers	Medium farmers	Large farmers	Total farmers
A.B.I centre*	-	-	-	-
Boundary Wall	-	-	-	-
Check Post and Gate	40(100)	39(97.5)	26(65)	105(87.5)
C.A Platform**	21(52.5)	12(30)	11(27.5)	44(36.66)
Covered Platform	-	-	6(15)	6(5)
Individual Platform	-	-	1(2.5)	1(.83)
Shop and Booth	39(97.5)	39(97.5)	40(100)	118(98.33)
Weight Bridge	38(95)	39(97.5)	40(100)	117(97.5)
Service link Road	39(97.5)	40(100)	40(100)	119(99.16)
F.S. Godowns***	1(2.5)	-	4(10)	5(4.16)
Kisan Rest House	-	-	-	-
Light arrangement	39(97.5)	34(85)	38(95)	111(92.5)
Parking Place	1(2.5)	-	-	1(.83)
Fire fighting station	8(20)	-	2(5)	10(8.33)
Sulabh Sauchalya	7(17.5)	1(2.5)	18(45)	26(21.66)
Drinking water	9(22.5)	3(7.5)	22(55)	34(28.33)
Canteen Facilities	12(30)	1(2.5)	22(55)	35(29.16)
Sewerage System	-	-	2(5)	2(1.66)
Petrol/disel Pump	-	-	-	-

Source: Field survey.

(Figure given in the parenthesis indicate the percentage of farmers)
(-) Not available
(*) A.B.I.-Agricultural Business Information
(**) C.A. - Common Auction
(***) F.S.-Food Storage

Table 1.2 communicates with the results about the infrastructure facilities available to the farmers in the *mandi* yard. It is evident from the table that there was no agriculture business information centre in *mandi* yard. Farmers of different categories reported that they even don't know about such types of facility. In relation to boundary wall, the table reveals that all farmers of different category have reported the non-availability of boundary wall around *mandi* yard. It was noticed through personal visit to *mandi* yard that boundary wall was damaged at many places. Furthermore, it is evident from the results that only 87.5 percent farmers are were using the check-posts and gates facilities. However, 100 percent small, 97.5 percent medium and 65 percent large farmers were using these facilities. About the common auction platform facilities, the table shows that only 36.66 percent of sample farmers reported the presence of such kind of facilities. The percentage of different sizes of farmers who were using these facilities was 52.5, 30 and 27.5 percent in small medium and large size farmers, respectively. Remaining farmers (63.34 percent) reported that this facility was not available to them. Thus, a very small numbers of the farmers utilized common auction platform, moreover the covered platform facility was available to just 5 percent of sample farmers, it means a very large number of sample farmers (95 percent) did not have this facility, besides this it is clear from the results that, this facility was not available even to a single farmer from small and medium size farmers. All the farmers who reported the availabilities of these facilities were from large size only, 15 percent of large farmers enjoyed these facilities. And the reason about the availability of this facility to large farmers as reported by the farmers themselves was that these farmers have big quantities of surplus wheat. In relation to the individual platform facility, it is clear from the table that only 0.83 percent of sample farmers were enjoying this facility means it was available to a very small number of sample farmers. The results are similar to covered platform facility as this facility was also not available to small and medium size farmers. In addition, to the large size farmers too, the facility was available to only 2.5 percent of them. Further the table shows that 98.33 percent of sample farmers reported the availability of shop and both facilities in *mandi* yards. The percentages of small, medium and large farmers to whom this facility was available were 97.5, 97.5 and 100 percent, respectively. It is also clear from the table that the availability of the facility was again more for large farmers as compared to small and medium farmers.

In relation to weight bridge facility, the table shows that 97.5 percent farmers reported for the availability of Weight Bridge in *mandi* yard. Among different categories, 95 percent of small farmers, 97.5 percent of medium size farmers and 40 percent of large farmers have reported for this facility. Here again, the availability of facilities were available more for large farmers in comparison to small and medium farmers.

As far it concerned to food storage godowns, this facility was available to just 4.16 percent of sample farmers. Only 2.5 percent of small farmers and 10 percent of large farmers had this facility. No farmers from medium size enjoyed the facility. In relation to the kisan rest house, it is evident from the table that the facility was not available to even a single farmer. Moreover, it was found from the survey that kisan rest House was available in the *mandi* yard but this facility was not for farmers. It was used for some other government works. And the farmers were shocked to know that they can also use these facilities.

Light arrangement is most important part of market facilities. The trading, which is going on at night needs a well lightened arrangement as it plays a major role for trading at night. The table indicates that this facility was available to 92.5 percent of sample farmers, where the percentages of different size farmers were 97.5 percent, 85 percent and 95 percent of small, medium and large farmers, respectively. About the facility of parking place, the table reveals that only 0.83 percent of sample farmers had this facility. It is clear that 99.17 percent of sample farmers, which is a huge number, had no place for parking.

In addition, it was reported that due to lack of parking place, farmers are forced to park their mean of transportation inside the *mandi* which in turn leads to big traffic jams. Sometime this traffic jam can go on for more than half day with in the *mandi* itself. Besides this it is clear that only 2.5 percent small farmers reported for the availability of parking place. These farmers were those, who used only light vehicles for transportation. It means the space was very small and was not at all sufficient to match the farmer's strength. As far it is concerned to the facilities of fire fighting stations, table shows that the facility was available to just 8.33 percent of sample farmers. It was 20 percent among small farmers and only 5 percent among large farmers. Through the visit to *mandi* yard and as reported by farmers it is observed that there was a small fire-fighting booth inside the *mandi*, and that was not sufficient enough for the *mandi* yard.

Sulabh sauchalya facility is very general or we can say a primary facility. However, the facility was available to only 21.66 percent farmers. 17.5 percent of small size farmers, 2.5 percent of medium size farmers and 45 percent of large category farmers had the facility, remaining 78.34 percent farmers complained for non-availability of this facility. The results about the drinking water facility show that the condition of drinking water facilities was very bad. Only 28.33 percent of sample farmers reported for the facilities where in different size farmers the percentages were 22.5 percent, 7.5 percent and 55 percent in small, medium and large, respectively. The farmers depended upon the *arthis* for drinking water in *Mandi* yard.

The table further reveals that 29.16 percent farmers had canteen facility in *mandi* yard, which also adds to the poor situation of *mandi* yard. 30 percent farmers of small category, 2.5 percent farmers in medium category and 55 percent farmers in large category enjoyed the availability of canteen in *mandi* yard. Furthermore, the facilities of water supply and sewerage system were available to just 1.66 percent of sample farmers, means very small number of farmers. Moreover, the facility was not available to small and medium farmers, and was available to just 5 percent in large size farmers. Finally, table indicates that there was no provision for petrol/diesel pumps in *mandi* yards.

CONCLUSIONS AND SUGGESTIONS

The current situation regarding the availability of physical infrastructure facilities in *mandi* yard (Mandi Dabwali Regulated Market, Sirsa) is very poor. Availability of the facilities of a well boundary wall, kisan rest house and petrol/diesel pump was negligible in *mandi* yard as reported by farmers. Facilities of covered platform, individual platform, food storage godown, parking place, fire fighting station and sewerage system were available to a very small number of farmers; it means these facilities were not available for all farmers. It may be concluded that these facilities were not sufficient enough looking at the size of the *mandi* yard. Furthermore, the infrastructure which was available to the farmers was very old and some time these facilities, being very old, even caused problems for farmers as well *Arthis.*

For improving the condition of the current situation of physical infrastructural facilities in *mandi* yard, it may be suggested that market committee may replace the old machines with new computerized weighing machine to speed up the process of the measurement of the weight. These machines may be installed at the main gate and after the process of weighing, proper records related to the foodgrain, should be kept. For improving the condition of focal points, market committee should construct cemented floor and a boundary wall. Farmers should communicate with each other and discuss about the agent charges, current prices, and availability of other faculties. Market committee can help them in this regard by providing a farmer community hall in *mandi* yard. It is suggested that Market committee should establish information center in *mandi* yard to spread awareness among farmers for their rights and other programs. For providing the updated information of market yard on current price quotation, market committee should distribute pamphlets in villages, at least weekly.

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AN EMPIRICAL STUDY OF ENTREPRENEURSHIP DEVELOPMENT IN SUB URBAN REGIONS: A CASE STUDY

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ABSTRACT

Globalization is the new buzzword that has come to dominate the world since the beginning of the nineties. Globalization has bought new opportunities to developing countries resulted into greater access to developed country markets, technology transfer which hold out promise of improved productivity and higher living standard. Entrepreneurship and economic development are intimately related. Schumpeter opines that entrepreneurial process is a major factor in economic developed and the entrepreneur is the key to economic growth of a country. Whatever be the form of economic and political set up of the country, entrepreneurship is indispensable for economic development. But globalization has posed some challenges like inadequate growth across and within nations, volatility in financial market and environmental deteriorations. Considering these challenges in the mind the proposed study is an attempt to analyze the growth rate of women entrepreneurship development in eastern part of UP and suggest the survival strategy for small and cottage scale entrepreneurs for strengthening the regional economy and eliminating the disparities.

KEYWORDS

Business, Entrepreneurship, Economic development, Industrial development, Women entrepreneurship.

INTRODUCTION

The words entrepreneur and entrepreneurship have acquired special significance in the context of economic growth in a rapidly changing socio-economic and socio-cultural climates both in developed and developing countries. The experience in the industrialized countries like the United States of America, Germany, Japan and the United Kingdom are authoritatively cited in support of this claim. An in-depth study of the subject thus becomes not only relevant but also necessary. Women constitute around half of the total world population, so is in India also. They are therefore, regarded as the better half of the society. In traditional societies, they were confined to the four walls of houses performing household activities. In modern societies, they have come out of the four walls to participate in all sorts of activities. The global evidences support that women have been performing exceedingly well in different sphere of activities like academics, political administration, social work and so on. Now they have started plunging into industry also and running their enterprise successfully. Therefore while discussing on entrepreneurial development; it seems in the fitness of the context to study about the development of women entrepreneurs in the country.

REVIEW OF LITERATURE

Yu T.F. (2001) developed a model of the 'entrepreneurial drawing on the experiences of few East Asian economics. Mambula (2002) analyzed major constrains faced by SMEs in Nigeria. The author recommended that small entrepreneurs should collaborate with each other to sort out the various problems faced by them. There is a need to form alliance of Government, Research Institutions and Financial Institutions to create appropriate training for prospective small business. J.Waston (2003) has examined the failure rates among female control business in Australia. The analysis of study highlighted that failure rate of female control business is relatively higher than male controlled business. But the difference is not significant after controlling for the effects of industry. J. Cope (2003) recognize the importance of learning events –discontinuous or non-routine events that happen during the entrepreneurial process that can lead to higher order learning. Trilochan Tripathy (2005) found that selecting the right type of micro enterprise and provide necessary training to the rural women aware reduce the extent of gender inequity prevalent in the rural sector and family empower the women both economically and socially. Srinivasulu Baylineni (2005) found that in this present scenario of globalization, privatization and liberalization of the world the daring entrepreneur can be established our economic world and also serve the society or nation with employment generation. Finally the entrepreneurship promoted the economic development and social welfare both.

Rajeev Ray (2006) reported that there is a match competence with categories of products and extent of mass customization is desirable. This will serve as a roadmap to a host of interest entrepreneurs. Work is also needed to quality economical benefits and costs associated with mass customization so that meaningful financial projections can be made and revenue and cost outcomes can be understood and further investigated. Narendra C. Bhandari (2006) reported that the 'luck' factor has a statistical relationship with the students' intentions of starting a business. A vast majority of the more than 1 billion people of India are Hindus, Sikhs, or Jains many believe in luck as a dominant variable that affects their life. Past, present and future people regularly cite luck as a variable in their successes and failures. Vijaya Shery, Chand Geeta & Amin Chaudhary (2006) found that teachers with a set of professional skills related to the primary school curriculum pedagogy and classroom management. Many teachers soon realized that if they are to achieve their educational for themselves to counter the difficult condition that confront them- mainly in the form of the low esteem in which the local community holds education and educators.

Stpal Wadhwa (2006) suggested that entrepreneurs can be developed through opportunity designed entrepreneurship development programs. Hanuman Prasad & B.L. Verma (2006) reported that Government of India has introduced policy measures to promote the status and the level of women entrepreneurship. But very few entrepreneurs could approach for assistance the root causes of these problems lies in the social systems and attitudes. J.R. Clark & Dwight R.Lee (2006) found that people with the entrepreneurial talent drive and propel economic progress by challenging the status quo with innovative approaches and products are found in every society. The spirit of bold entrepreneurship is necessary for economic progress but it is not sufficient. Some what easier to justify policies that restrict our freedom just a bit more, which in turn further erodes the informed discipline of the market providing justification for the next round of restriction on freedom etc. understanding this destructive dynamic is crucial in protecting not just entrepreneurial freedom, but all our freedoms.

Vinayayamoorthy and Vijay Pithadia (2007) found that the economic activities of SHGs area are quite successful and SHGs in North Tamil Nadu are very successful to develop women empowerment and rural areas. Prema Basargekar (2007) found that the women entrepreneurship is affected by negative and positive drivers. Women entrepreneurs face a number of problems such as socio-cultural barriers, financial constraints, managerial and technical constraints and so on. M.M. Shakar and M.E. Vijayalakshmi (2007) have examined motivating factors among women entrepreneurs in Chennai. They categorized the various motivating factors into push and pull factors and it was concluded that women entrepreneurs were motivated by the pull factors. Angeline Low (2007) has examined economic outcomes of female immigrant entrepreneurship in Sydney. The study has shown that these entrepreneurs have made significant contribution to the creation of new business and job in addition to other non-quantifiable economic benefits to Australia.

Dr. B.K. Jha (2008) has done with the focus on the development of entrepreneurship of village areas the active participation of the banking services the village can be transformed into thriving cities along with crop-cultivation. A.K. Makar & D.C. Kalita (2008) found that the purpose of providing education to women is to enable them to think critically identify their strengths and take conscious informed decision empower them to play a positive role on their own in the development of the nation. S. Mathivanna and M Selva Kumar (2008) found that business ownership provide women with independence they crave for and with economic and social satisfaction. Ravindra Rena (2008) found that the micro-finance has the potential to assist poor women as well as small-scale women entrepreneurs.

Anil Kumar & Divya Verma (2008) reported that the problem of women entrepreneurs can be tackled by imparting training in the field of management of small enterprise. Anil Kumar (2008) found that the low level of awareness is responsible for less utilization of services of supporting agencies of women entrepreneurship. P. Nagesh & Nrasimha Murthy (2008) has emphasized for awareness and training programmed of development of women entrepreneurship it needs a serious effort by central and state government also.

On the basis of the available literature it is clear that women are not having proper information about the industry and business. Further there is a huge gape and gender inequality in the society. This is one of the reasons for low pace of entrepreneur development of women. Keeping these facts in the mind the proposed study focuses on the following objective

OBJECTIVE OF THE STUDIES

- To understand entrepreneurship driven employment generation in Jaunpur district, Uttar Pradesh
- To analyze growth of entrepreneurship from 2005-2008.
- To identify various sectors involved in entrepreneurial activities.
- To understand male – female participation in entrepreneurship.

METHOD

Secondary data has been used in the present study data from government resource main available by DIC has been used.

DATA ANALYSIS

The data collected was subjected to quantitative analysis Total, Average, and Percentage have been used for the analysis

JAUNPUR- AN OVERVIEW

Jaunpur is a semi- urban city of eastern Uttar Pradesh. It is one of the biggest districts of the state as per the area. The population of the district is 39 lakhs 11,305 as per the 2001 census. The gender composition of male and female is 10:14. The literacy rate is 60%. Male literacy is higher (59.98%) as compared to females (45.53 %), (Table-1)

TABLE 1: JAUNPUR- AN OVERVIEW

Demography	2001
Total Population	8911305
Male	1935576
Female	1975729
Gender Ratio	
Male	1000
Female	1014
Total % of literacy Rate	59.98%
Male	77.16%
Female	43.53%

Source: CENSUS Report 2001

RESULTS

GROWTH OF INDUSTRIAL DEVELOPMENT OF JAUNPUR

The district Jaunpur is having more than 1400 industrial units spread over in its entire territory (DIC 2008), out of which the largest number of units is in repairing and service sector (520), followed by more than 250 units in the area food product industry. The number of wool product units is third largest industrial segment of the district, as more than 200 units are in the area of wood products. The next largest industrial unit are in the category of miscellaneous includes handicrafts, embroideries etc. The highest growth of upcoming industrial units are in the area of metal products as the growth rate in this sector is more than 90% for the year 2007-08 in comparison to the previous year 2006-07. The second largest growing industry in Jaunpur district is food product industry its growth rate is more than 50% for the year 2007-08 in comparison to the year 2006-07. But on the other hand surprisingly there is a downfall in the growth of industrial units specially in he field of beverages, cotton, textile, jute textile, non metallic mineral, electrical, transport equipments etc, as there was no growth in the year 2007-08 (Table-2)

TABLE 2: TOTAL INDUSTRIAL STATUS OF JAUNPUR DISTRICT

S No.	Industries	Year (2007-2008) No. of units & (%)	Year (2006-2007) No. of units & (%)	Year (2005-2006) No. of units & (%)	Total
1	Food Product	130 (51.38)	68 (26.87)	55 (17.3%)	253
2	Beverages, TOBA,TOBA Product	-	01 (50)	01 (50)	02
3	Cotton Textiles	-	-	02 (100)	02
4	Wool, Silk & Synthetics Fiber Textiles	16 (25.29)	18 (28.57)	29 (46.03)	63
5	Jute, HOMPs MESTA Textiles	-	-	-	00
6	Hosiery & Garments	25 (40.32)	27 (48.54)	10 (16.12)	62
7	Wood Product	52 (25.12)	74 (35.74)	81 (39.13)	207
8	Paper Product & Printing	06 (40)	09 (60)	-	15
9	Leather Products	07 (29.17)	04 (16.67)	13 (54.46)	24
10	Rubbers Plastic Product	05 (41.67)	06 (50)	01 (8.33)	12
11	Chemical & Chemical Product	02 (11.76)	09 (52.94)	06 (35.29)	17
12	Non Metallic Mineral Product	-	01 (50)	01 (50)	02
13	Basic Metal Industries	18 (90)	02 (10)	00	20
14	Metal Product	13 (46.42)	09 (32.14)	06 (21.44)	28
15	Machinery & Part Except Electrical	03 (14.29)	18 (85.71)	-	21
16	Electrical Machinery & Apparatus	-	03	-	03
17	Transport Equipments & Part	-	-	-	-
18	Miscellaneous MFG	67 (42.14)	74 (46.54)	18 (11.32)	159
19	Repairing & Servicing Industries	146 (28.08)	153 (29.42)	221 (42.50)	520
	Total	**490 (34.00)**	**476 (33.03)**	**475 (32.97)**	**1441**

Source DIC Jaunpur

MEN ENTREPRENEURSHIP DEVELOPMENT IN THE DISTRICT

Almost all the units are owned by the male counter part in the districts in the entire industrial sector. The maximum units are in the area of repairing and servicing sector followed by food products as more than 200 units are in the category of food products. The wood product follow this line and around 200 units are in the area of wood products, wood product category includes bamboo and other wood related products.

The minimum number of unit owned by men are beverages, cotton, textile, non metallic minerals, electrical and machinery apparatus. The beverage industry, cotton textile industry, non metallic products, electrical machinery products are the least attractive sector for the entrepreneurs, as no growth has been seen in the year 2007-08. (Table-3)

TABLE 3: MEN ENTREPRENEUR

S No.	Industries	Year (2007-2008) No. of units & (%)	Year (2006-2007) No. of units & (%)	Year (2005-2006) No. of units & (%)	Total	%age
1	Food Product	110 (51.11)	60 (27.9)	45 (20.9)	215	84.98
2	Beverages, TOBA,TOBA Product	-	01 (50)	01 (50)	02	100
3	Cotton Textiles	-	-	02 (100)	02	100
4	Wool, Silk & Synthetics Fiber Textiles	14 (26.4)	15 (28.3)	24 (45.3)	53	84.12
5	Jute, HOMPs MESTA Textiles	-	-	-	-	-
6	Hosiery & Garments	17 (36.9)	21 (45.6)	08 (17.39)	46	74.19
7	Wood Product	43 (24.43)	64 (36.36)	08 (39.2)	176	85.02
8	Paper Product & Printing	06 (40)	09 (60)	-	15	100
9	Leather Products	07 (29.16)	04 (16.6)	13 (54.16)	24	100
10	Rubbers Plastic Product	05 (41.66)	06 (50)	01 (6.33)	12	100
11	Chemical & Chemical Product	02 (11.76)	09 (52.9)	06 (35.2)	17	100
12	Non Metallic Mineral Product	-	01 (50)	01 (50)	02	100
13	Basic Metal Industries	18 (61.8)	02 (9.09)	02 (9.09)	24	100
14	Metal Product	13 (46.42)	09 (32.14)	06 (21.42)	28	100
15	Machinery & Part Except Electrical	03 (14.28)	18 (85.7)	-	21	100
16	Electrical Machinery & Apparatus	-	03 (100)	-	03	100
17	Transport Equipments & Part	-	-	-	-	-
18	Miscellaneous MFG	55 (40.74)	64 (47.4)	16 (11.85)	135	84.90
19	Repairing & Servicing Industries	112 (26.4)	127 (29.9)	195 (45.9)	424	81.53
	Total	**405 (32.76)**	**413 (33.4)**	**418 (33.8)**	**1236**	**85.77**

WOMEN ENTREPRENEURS

More than 200 units are under the control of women in the district this is very low participation of women in the field of industrial development. The maximum number of unit owned by women are related to repairing and servicing sector, followed by food products, and wood products. Out of 19 industrial areas the district the women participation is zero with 13 industrial sectors (Table-4).

TABLE 4: WOMEN ENTREPRENEURS

S No.	Industries	Year (2007-2008) No. of units	Year (2006-2007) No. of units & (%)	Year (2005-2006) No. of units & (%)	Total	%age
1	Food Product	20 (52.6)	8 (21.05)	10 (26.3)	38	15.1
2	Beverages, TOBA,TOBA Product	-	-	-	-	
3	Cotton Textiles	-	-	-	-	
4	Wool, Silk & Synthetics Fiber Textiles	2 (20)	3 (30)	5 (50)	10	15.8
5	Jute, HOMPs MESTA Textiles	-	-	-	-	
6	Hosiery & Garments	8 (50)	6 (37.5)	2 (2.5)	16	25.8
7	Wood Product	9 (29.05)	10 (32.2)	12 (38.7)	31	14.9
8	Paper Product & Printing	-	-	-	-	
9	Leather Products	-	-	-	-	
10	Rubbers Plastic Product	-	-	-	-	
11	Chemical & Chemical Product	-	-	-	-	
12	Non Metallic Mineral Product	-	-	-	-	
13	Basic Metal Industries	-	-	-	-	
14	Metal Product	-	-	-	-	
15	Machinery & Part Except Electrical	-	-	-	-	
16	Electrical Machinery & Apparatus	-	-	-	-	
17	Transport Equipments & Part	-	-	-	-	
18	Miscellaneous MFG	12 (54.5)	10 (45.4)	2 (9.1)	24	13.6
19	Repairing & Servicing Industries	34 (39.5)	26 (32.2)	26 (30.2)	86	16.5
	Total	**85 (41.5)**	**63 (30.7)**	**57 (27.8)**	**205**	**4.2**

CONCLUSION

Jaunpur is an under developed district of the State as per the growth rate of industry. The maximum growth is seen in the field of repairing and servicing sector which is based on the labour skill and knowledge. This sector did not need more capital and infrastructure repairing and servicing can be started. This trend indicates the low per capita income and insufficient fund/capital with the entrepreneurs. The second attractive industry is food products which required fewer infrastructures and low amount of fund. On the other hand heavy industrial units transport equipments, electrical machinery apparatus, non metallic mineral products, jute and textile products were did not find place for most of the entrepreneurs as there areas of industries required huge amount of fund and large infrastructure.

On the basis of the data it is clear that most of the units are labour intensive and small and cottage nature in its size, because of non-availability of adequate amount of fund to establish a heavy industry. The Government should promote the entrepreneurs in the area of agriculture and food processing industry sectir like; animal husbandry, poultry, piggery, fisheries, milk and dairy products etc. Adequate training programme should be conducted to promote the entrepreneurship, the women participation is very low so the special efforts should be made to promote women entrepreneur in all industrial sector. The economic development of the district as well as state and the country can not be done with out the participation of women in any field or industry, as the women consist of half of the population.

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INTRODUCTION OF ISLAMIC BANKING IN INDIA: A SUGGESTED LEGAL FRAMEWORK

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ABSTRACT

This paper examines the Islamic Banking system on a domestic level in comparison to the global level as well as comparison to the conventional banking system. A well developed banking system is a pre-requisite for the smooth and effective functioning of an economy, at the same time as efficient allocation of the country's assets. The basic task of any banking organisation is it to mobilize savings from the investors' community and channel these savings to high – yielding projects. The fundamental of the most banks in the world are based on interest charged on loans and interest paid on deposits. Islamic banking is based on Islam's Shariah principles, according this, interest (Ribah) in any form is unlawful and borrower must not bear all the risks/ cost of a failure, resulting in a balanced distribution of income and not allowing lender to monopolize the economy. Hence, Islamic Banking operates without charging or paying interest. India is still in front line for attracting placements and investments from abroad and the Muslim dominated middle east countries are having excess funds and looking for suitable investment opportunities, this is the precise time to understand and adopt this emerging mode of banking known as Islamic Banking and to analyze its prospects in India. However the present rules and regulations prohibit this banking system from entering and setting base in India. The authors have suggested a universally accepted legal frame work for introducing the same into India, after research on past, present and existing regulatory models and market scenario.

KEYWORDS

Islamic banking, Banking, Economy.

INTRODUCTION

This paper examines the introduction of Islamic Banking in India in a comparison to the global level as well as comparison to the conventional banking system. A well developed banking system is a pre-requisite for the smooth and effective functioning of an economy, whilst efficient allocation of the country's assets. The basic task of any banking organisation is it to mobilize savings from the investors' community and channel these savings to high – yielding projects. The fundamental of the most banks in the world are based on interest charged on loans and interest paid on deposits.

Islamic banking is based on Islam's Shariah principles, according this, interest (Ribah) in any form is unlawful and borrower must not bear all the risks/ cost of a failure, resulting in a balanced distribution of income and not allowing lender to monopolize the economy. Hence, Islamic Banking operates without charging or paying interest. The depositor and bank come to an agreement wherein both parties share profit and losses at the end of the year. The bank invests in projects after rigorous analysis. The shareholders of the bank would absorb any losses.

This banking system initially started in the 1970s as an unorganized sector in the Middle East to provide credit for Muslims who could not participate in conventional banking due to religious inhibition, slowly attracted attention and became a global banking option today. Islamic Banking has turned a major alternative mode of banking even in non-Muslim countries, reiterating its global recognition. Islamic Banks have been evolving over the years, coming up with innovative financing and investment products without the involvement of Ribah. They usually engage in profit- and – loss sharing (PLS) with clients according to shariah.

ISLAMIC FINANCE ASSETS IN THE WORLD

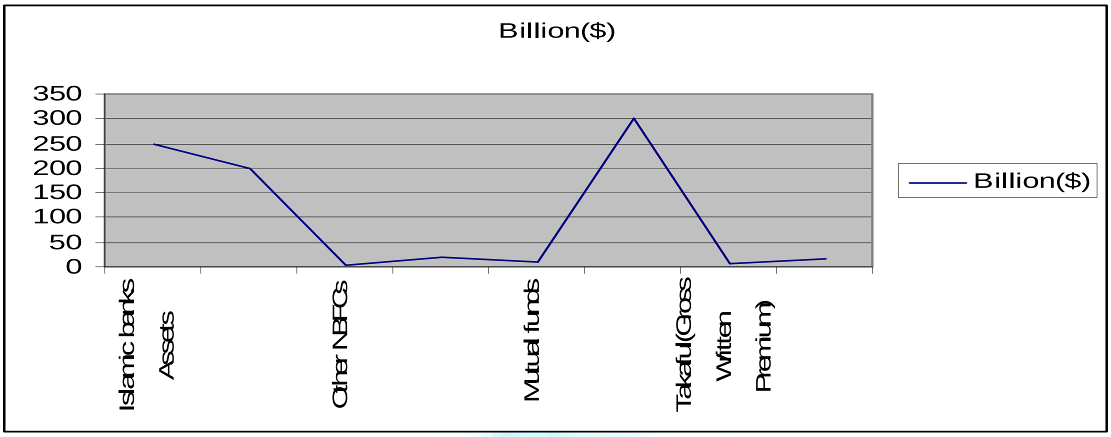
Islamic banking industry in the world Comprises of around 250 Islamic finance institutions (IFIs) in 75 countries with assets over USD 800 billion under management. The industry has been reporting a CAGR of 10-15% over the past decade the trend is expected to continue with assets growing to over USD 1 trillion by 2010, which would account for over half of the saving of the then global Muslim population. This is exclusive of around of 250 mutual funds investing funds in adherence to shariah principles.

TABLE 1: ISLAMIC FINANCE ASSETS

Segments	Billion($)
Islamic banks Assets	250
Islamic Banking Windows Assets	200
Other NBFCs	4
Sukuks	18
Mutual funds	11
Stocks(M-Cap)	300
Takaful(Gross Written Premium)	5
Malaysian Domestic Bonds	17

Source: HSB S&P Islamic Finance Outlook 2009.

FIGURE-1: ISLAMIC FINANCE ASSETS IN THE WORLD



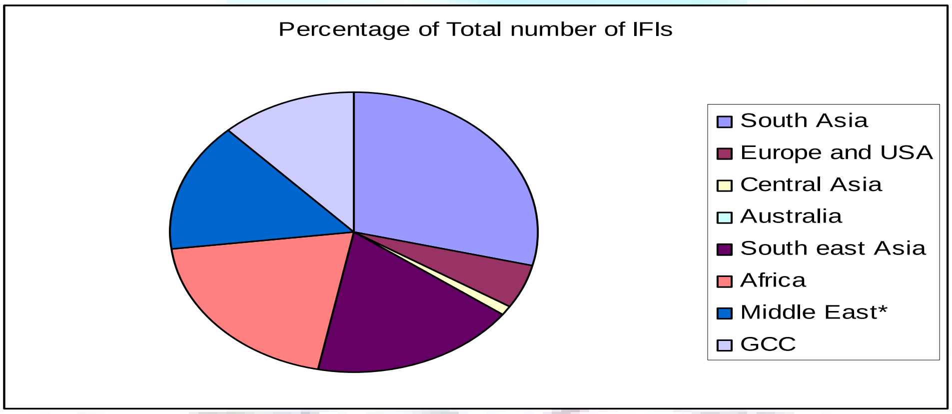
Islamic banks, though initially concentrated around Middle East and South East Asia(dominated by Malaysia and North Africa(MENASEA) regions, have recently started gaining recognition and popularity in the UK and USA, Germany and other non- Muslim nations. Latest available data suggests over 36% of the global IFIs were outside the MENASEA(Middle East Nations and South East Asia) regions and held over 27% of the total assets base. However, this figure is estimated to have grown largely following the recently encouraged interest in Shariah based banking in modes in Europe and the USA.

TABLE: 2 GLOBAL ISLAMIC BANKS

Region	Percentage of Total number of IFIs	Percentage of Total Assets	Percentage of Total deposits	Percentage of Total Net Profit
South Asia	29	26	23	20
Europe and USA	5	1	1	5
Central Asia	1	0	0	0
Australia	0	0	0	0
South east Asia	18	2	2	4
Africa	20	1	1	2
Middle East*	15	56	61	20
GCC	12	14	12	49

Sources: Directory of International Islamic Banks and Financial Institutions: 2007

FIGURE-2: GLOBAL ISLAMIC BANKS



ISLAMIC BANKS' MODES OF FINANCING

1. Mudaraba : Profit sharing.
2. Murabaha : Cost plus mark-Sales on deferred payment basis.
3. Musharaka : Joint venture partnership base on capital contribution and profit sharing.
4. Istisnaa : (deferred delivery sale contract) applicable to work in progress financing for capital projects.
5. Ijarah : Operation and finance/lease purchase.
6. Tawaruk : Short term cash facility.
7. Private equity investment : Diminishing and permanent partnership.
8. Sukus al_ salam : Short term Islamic securities 3, 6 and 12 months.
9. Sukuks al_ijara : Medium to long term securities up to 5 years

CONVENTIONAL BANKING VS ISLAMIC BANKING

In comparison with conventional banking system, Islamic bank's assets and deposits have grown at CARG of 20-22% while those of conventional banks have grown at a rate of 11 % for the period of 2002 -2003. For the same period, the two modes of banks have returned an average of 19% and 16% respectively on Equity. Statistics suggests hat IFIs have consistently shown higher profitability (in terms of ROE and ROA %) than conventional institutions.
However admittedly, the profitability of Shariah compliant dedicated Islamic banks, in terms of return on assets (ROA) is lower than that of their counterparts in the conventional banking sector (Average ROA of conventional banks against a representative Islamic bank). This can be attributed to lack of high margin innovative financing products in the nascent sector. The scene look brighter in India however, considering the average ROA of schedule commercial banks(SCBs) against that of Sheyad Shariat, a NBFC practicing in India.(2005 for others, 2008 for India, RBI, banks annual reports) . Besides geographical reach, over the years, the complexities of the products offered by the Islamic banks have widened to attract a larger and more value-seeking customers base. What

started with simple commercial banking in early 1970s has grown adding more products to its kitty and currently offers and broad range innovative products including commercial banks, sukus, Ijara, tawarruq, Murabaha, mudrarabah, Musharaka, takaful and Sharia based mutual funds.

ISLAMIC BANKING IN USA, UK, FRANCE ETC

On the November 6, 2008, the U.S., Treasury Department hosted a seminar on Islamic banking to train government employees on Sharia-compliant finance (SCF). According to a press release, it was "designed to help inform the policy community about Islamic Financial Services which are an increasingly important part of the global financial industry." It is interesting to note that while many in the West deride parallel societies, the lack of integration, and overall "foreign-ness" of its Muslim populations, they have no problem embracing Islamic banking. Maybe because this is the one area of religious "encroachment" that allows the West to make money, and lots of it. The U.S. is behind European nations like the UK and France, which are actively promoting Islamic banking. The UK already offers:

1. Sharia-compliant Car Insurance,
2. Sharia-compliant Credit Cards;
3. Sharia-compliant Mortgages

Banking oversight in the UK is handled by the Financial Services and Authority (FSA), a non-governmental body whose members are appointed by the Treasury. The FSA does not regulate the Sharia compliance of Islamic financial products, deferring instead to the Sharia supervisory board (SSB) of the financial institutions it has approved. Such religious deference, especially when the U.S. is still engaged in a "war against terror," is a serious concern to critics of SCF.

One critic, the Coalition to Stop Sharia, hosted a press conference on the same day to reiterate its concerns, which were previously presented to various financial heads, but were ignored. The Coalition joins various organisations that do not want SCF practiced in the United States because of its potential connections to Islamism, the enemy in our "war on terror," and the liability that would attach to practitioners of SCF who do not understand the potential seditious nature of their involvement. Speakers included: Robert Spencer, author of Stealth jihad ; Frank Gaffney, Center for Security Policy; Dan Pollak for Morton Klein, Zionist Organization of America; Andrea Lafferty, Traditional Values Coalition; among others.

The role of religion in secular and global institutions presents unique concerns that should be scrutinized since true checks and balances are not possible where deference to religious heads is unavoidable. In the case of SCF, only Sharia scholars can decide whether a financial product is permissible (halal) or not. They are thus the only individuals who can theorize as to why or how a product can become "halal." This removes the ability of all practitioners who are not part of the SSB from engaging in product development beyond doing what they are told to find and prevent any illegality. If questions of fraud, breach of duty, negligence, criminal liability, etc. arise over any transactions, these same individuals will nevertheless remain liable.

Consider the current global crisis related to subprime mortgages as a point of comparison. Who did what and how is on everyone's mind. Was the cause naïve consumers or predatory lending? Financial products are complicated as it is without throwing the element of religion into it. Moreover, Secretary of the Treasury Paulson does not have the answers, though he is in charge with no apparent oversight.

In its worst-case scenario, SSBs act just as unilaterally, can go back on previous decisions, or contradict the decisions of other SSBs. Who is right and who decides? What administrative body or court in the U.S. is in a position to question a Sharia-based product? Even if transactions state New York as the jurisdiction for dispute resolution, the courts must invariably rely on Sharia-based decisions from foreign courts for theories and interpretation. If a U.S. court offers a decision based on its own theory, who will make the decision binding since Sharia is divine, i.e., not to be superceded by secular law?

Besides religion, subversive political goals are another unique element inherent in SCF that subprime avoided. Renat Bekkin, international law lecturer at the Moscow State Institute of International Relations (MGIMO-University) and proponent of SCF in Russia, stated in an interview to New Horizon, the oldest Islamic banking magazine in the UK, that not all Muslims in Russia favor SCF because they see it as form over substance, like creating Islamic whiskey. For some other Muslims, Bekkin argues, "practicing all principles of Islam, including in the financial sphere, is essential."

This latter group concerns critics of SCF because they are part and parcel of the global Islamist movement. Advocates of Islamism define Islam as a complete sociopolitical system that should govern one's personal and private life. This is a 20th-century phenomenon fueled internationally by oil profit in the Middle East. First articulated by non-scholars like Syed Qutb, Abul Ala Mawdudi, and Hasan al-Banna, this totalitarian ideology has evolved into the separatist Salafi movement, which encourages segregating Muslims from non-Muslims through violent jihad and non-violent means.

The Coalition to Stop Sharia believes SCF is one such non-violent strategy since the Islamist movement advocates replacing capitalism and democracy with Islamic law, or Sharia. While many progressive Muslims argue and reinterpret Sharia in ways compatible with universal human rights and democracy, their position remains theoretical. In practice, Sharia remains an archaic understanding of human relations as evidenced by Saudi Arabia, Iran, and Pakistan (in partial codification), etc.

In this context, practitioners of SCF who are Muslim and non-Muslim and who reside in democratic nations like the United States put themselves in the position of unintentionally aiding and abetting seditious activity by promoting particular SCF institutions, individuals, or transactions that are potentially Islamist. How we are to know what is and is not is beyond the scope of the U.S. government or the U.S. banks that seek to profit from SCF. Further, by not alerting consumers and clients of the "dark side" of SCF, these same practitioners are potentially failing a duty of care by not providing material information from which a consumer can make what a court would consider a well-informed decision.

Thus, it is a mistake for the U.S. Treasury to host a seminar to "inform" the public of SCF, without including the criticism. Jumping into a new, little-understood industry like SCF, with the same zeal for profit evident in subprime lending, could lead to new problems in the future. By addressing the Coalition's concerns, the government could create the appropriate regulation, oversight, and transparency mechanisms to counter the possible threat Islamists present to the SCF industry. Or simply realize that the short-term gains are not worth the long-term dangers Islamism's mission against the West presents.

CONSTRAINTS IN IMPLEMENTING OF ISLAMIC BANKING IN INDIA

1. RBI's Hurdles

It is a known fact that Islamic finance is governed by Sharia, and is known to be conservative with its philosophy. Under Sharia, interest income is not permitted and along with that the funds cannot be used for speculation, alcohol and a few other sectors. This is still fine, but the biggest diversion of Islamic banking from the conventional Indian banking is that the former does not just lend, but becomes an equity partner in the project, sharing both the profits and losses, whatever might be the case. Another activity which defines Islamic banking is that the banks can engage in trading, purchase and resale of properties and investment and various other activities, which is not permissible under the Indian Banking Regulation Act, 1949. Along with this, there are constraints as the bank rate, such as maintenance of Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) as per the provisions of Banking Regulation Act, 1949, involves the concept of interest, which is not permissible under Sharia Act.

2. Rationality of Irrational Objection

It is reported that the Kerala state government is all set to tap the investments from the Middle-East region through the Islamic finance route. It is also reported that the centre has yet not given a nod for Islamic banking, though it has been under deliberation for long. Though there are challenges in creating an enabling framework for Islamic banking, given the conventional banking regulations, but then some kind of proactive thinking is required for opening doors for Islamic finance, knowing well that it has done wonders in the other parts of the world and at the same time certain political party in India got the stay order by suing the term secular and their own interpretation by the loop holes available in Indian constitution when most developed countries have embraced even though they are against the Islam. If the term Islam principles based banks are against the constitution then the present conventional banking system also against the constitution of India because it is based on Jews principles, which also supports certain religious principles. Banking Origin and Development Like capitalism, the modern commercial bank developed in the Italian. The religious orders and the Jews first made moneylending a thriving business. The Amsterdam

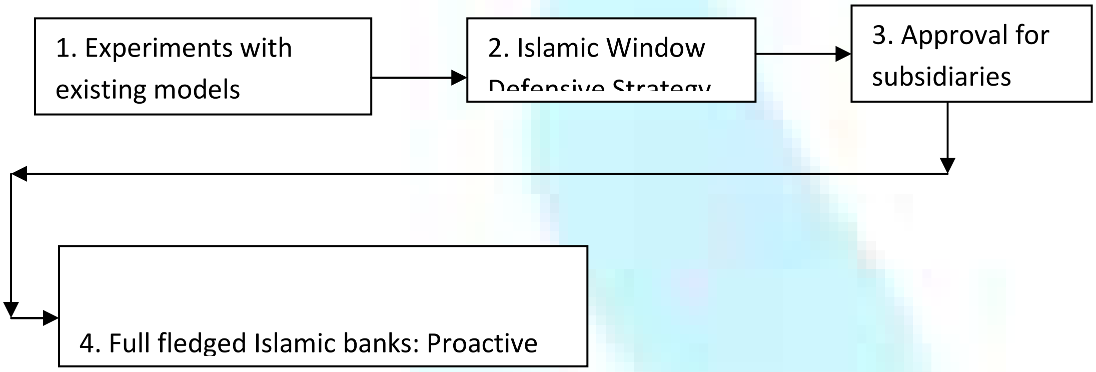
Wisselbank (1609) made loans to the East India Company. The principle elements emerged in the operations of London goldsmiths in the latter while the true origins of banking are obscured by a lack of written records, many banking functions, especially money lending and money changing, are as old as the earliest known civilizations. Five thousand years ago Sumerian priests were accepting deposits and making loans. Over the course of history, wherever trade developed, money changing became necessary and so became the business of specialists. In Rome during the republic and early empire eras, banks accepted deposits, made loans, and transferred funds on the basis of oral contracts. It was not until the 18th century that "modern" banking that is, banking as it is known today emerged fully. Hence should we remove the present banking system, therefore wherever good things present without considering religion, region, nationality and race we should absorb the same, ie rationally we should take up good things wherever they are without objecting them irrationally.

RECOMMENDATIONS

1. There are constraints as the bank rate, such as maintenance of Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) as per the provisions of Banking Regulation Act, 1949, involves the concept of interest, which is not permissible under Sharia Act. All in all, there are challenges but then just like there are separate regulations for Non-Banking Financial Companies (popularly known as NBFCs) in India, similar provisions can be created to cull out Islamic banking and finance within the country by which we can attract middle east resources, which can be used for our infrastructure facilities, through which we can attain our desired economic growth.
2. As discussed early, the banking and political constraints exists have made the scene dull for shariah based banking in India. On the other hand, appropriate acknowledgment of the massive growth this sector and strategic initiatives to accommodate these innovations in the Indian banking sector is deemed to impact the economy positively. Based upon this, author have been emboldened themselves to suggest a structure of introduction and strategies for integration of Islamic banking into mainstream banking.

STAGE CONSTRUCTION OF INTRODUCTION OF ISLAMIC BANKS IN INDIA

The following stages have been constructed by the authors for introducing Islamic Banking in India by phase by phase manner.



1. The performance and potential of the IFIs can be tested by experimental modification of NBFC regulations to provide a larger operating platform and drive growth.
2. The RBI could license a few global players already practicing Islamic banking in overseas with in the country by gaining expertise in the operational and regulatory activities slowly.
3. The licensing should be slow and phased out that would recognize the expertise already gained by the players like HSBC, Citigroup and other global players.
4. The government can follow example set by secular countries like USA, UK, France, and Germany especially non-Muslim countries to amend to our law which can permit the entering of Islamic banks into India.
5. If the term Islam is the only problem, we can remove the term Islam and call it as Participatory or Equity Bank. If this kind of banking is wrong or against the constitution of India, then permitting of issuing equity share capital is also wrong or against the constitution of our country.

CONCLUSION

The introduction of full-fledged Islamic banks into the system follows ample proof of historical performance of subsidiaries. However, this would require larger changes in existing laws by RBI to accommodate Shariah principles that conflict with existing rules. This is a long term activity. This would be accompanied by proactive transition from Islamic client base to value seeker and increasing scope of operations through innovative instruments

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MEASURING CORPORATE SUCCESS: STATISTICAL ANALYSIS OF FINANCIAL PERFORMANCE INDICATORS

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ABSRTACT

The Financial Theory has long for suggested that the corporate objective is to maximize the wealth of its shareholders by maximizing the market price of its shares. In other words performance on the stock market is an index of corporate success. Any corporate entity experiencing a rise in the market price of its stocks is considered a good bet by the investors. Although Share prices in the market are sensitive to a large number of factors, there is no denying the fact that the profitability of an enterprise is a prerequisite for its performance in the stock market. Also a large number of profitability measures such as Return on Investment (ROI), Return on Capital Employed (ROCE), Return on Net Worth (RONW), Return on Sales, (ROS) and the most recent measure Economic Value Added (EVA) are used to gauge the financial health of a business corporate. The present paper aims at Measuring Corporate Success through various profitability indicators for selected Indian Corporates. The study empirically evaluates these measures for the 30 selected companies from major industry sectors of India. Statistical Estimation of the relationship between these performance indicators and market price of the shares of these Corporates for the period of five years 2005 to 2009 has been carried out using Correlation and Step-wise Multiple Regression Analysis. A comparative Analysis of the performance indicators for Indian Corporates is conducted by ranking the selected companies as regards various indicators and the variations in the rankings are statistically examined. The results of the study contribute in two ways: Firstly, they help to find out the best profitability measure for Indian Industries and secondly, to estimate the financial strength of the companies and its relation to the company share prices for the period under consideration.

KEYWORDS
Corporate Success, EVA, ROCE, RONW.

INTRODUCTION
The financial theory has for long suggested that corporate objective is to maximize the wealth of its shareholders by maximizing the market price of its shares. In other words performance on the stock markets is an index of corporate success. Financial markets play a vital role in mobilization of savings in the economy for investment purposes.

Although share prices in market are sensitive to a large number of factors, there is no denying the fact that profitability of an enterprise is a pre-requisite for its performance in the stock market. Also a large number of traditional profitability measures viz. Return on Capital Employed(ROCE), Return on Net Worth(RONW), Return on sales(ROS), Earning per Share(EPS), etc., are used to gauge the financial health of a business corporate. However, very few attempts are made to find out whether Economic Value Added (EVA) & returns from equity shares are having any relationship in Indian context. EVA is a criterion which has recently gained popularity as an indicator of corporate performance, which should be considered by shareholders for making investment decision. No enterprise survives or grows if it fails to generate wealth for ultimate stakeholders. An enterprise may exist without making profit but cannot survive without adding value. Economic Value Added is a broader financial measure of judging the output of a corporate in particular and the industry in which such corporate works in general to economic growth and development of nation. Hence, the mounting significance of the EVA concept has necessitated the investigators to carry out a self-regulating study for throwing some light on its practical face in India. The central idea of EVA is subtracting the cost of capital from the firm's profits to measure, as the term indicates, the economic added value produced by the firm to its owners over the weighted average cost of the capital employed.

OBJECTIVES
The present paper aims at
- Comparing various profitability measures to evaluate Corporate Success.
- Estimating the relationship between traditional variables of profitability & Equity Returns.
- Ranking Sample Company's on basis of EVA & other profitability indicators.
- Assessing the relevancy of EVA in explaining its contribution to the shareholder's wealth.

RESEARCH METHODOLOGY
A sample of 30 leading companies from various industrial sectors of Indian Industries was selected for this study. Data on major financial variables was collected for the period of five years, from financial year 2004-05 to 2008-09. Annual reports, Company websites, and ICICI Research data base form the major Data Sources. Simple statistical tools such as correlation and Stepwise Regression Analysis were used for the analysis purpose.

HYPOTHESIS OF THE STUDY
It is hypothesized that the accounting-based rates of return (ROI, ROCE and ROS) fail to assess the true or economic return of a firm as these are based on historical asset values and that EVA is a better indicator of a firm's performance measured in terms of market price of equity and equity returns.

ANALYSIS
In order to analyze the relationship between Equity Returns and profitability measures Karl Pearson's correlation coefficients are calculated and the corresponding 'p' values are used for testing statistical significance.

DESCRIPTIVE STATISTICS

	Mean	Std. Deviation	N	C.V.
RETURNS	.015522	.0224340	30	1.4453
EVA	1092.179928	0.0019306408	30	0.0000017
EPS	27.896133	33.8856030	30	1.2147
RONW	14.699667	11.7165958	30	0.797065
ROCE	11.194046	12.9325854	30	1.155309
ROS	8.636411	7.9655553	30	0.92232

CORRELATIONS

		RETURNS	EVA	EPS	RONW	ROCE	ROS
Pearson Correlation	RETURNS	1.000	-.186	.041	-.292	-.332	-.322
	EVA	-.186	1.000	.482	.570	.525	.564
	EPS	.041	.482	1.000	.598	.384	.501
	RONW	-.292	.570	.598	1.000	.881	.967
	ROCE	-.332	.525	.384	.881	1.000	.973
	ROS	-.322	.564	.501	.967	.973	1.000
Sig. (1-tailed)	RETURNS	.	.163	.415	.059	.037	.041
	EVA	.163	.	.003	.001	.001	.001
	EPS	.415	.003	.	.000	.018	.002
	RONW	.059	.001	.000	.	.000	.000
	ROCE	.037	.001	.018	.000	.	.000
	ROS	.041	.001	.002	.000	.000	.

The above table indicates that EVA is the most consistent variable on the basis of co-efficient of variation of all the variables. The correlation matrix indicates negative relationship between equity returns and EVA is found to be insignificant equity returns are negatively correlated with the other profitability measures such as RONW, ROCE & ROS and all are found to be insignificant. Thus, there is no statistically reliable relationship between EVA and equity returns. The correlation co-efficient between EVA & EPS is found to be 0.482 & hence, R^2=0.2323 which indicates that EPS explains the total variation in shareholders wealth only up to 23%. Similarly, the correlation co-efficient between EVA & RONW is found to be 0.57 and that between EVA & ROCE is 0.525. Hence, R^2=0.3249 and R^2=0.2756 respectively which indicates that RONW explains 32% of total variation in shareholders wealth and ROCE explain 27% variation in shareholders wealth. Thus, there exists relatively high correlation between EVA and RONW and ROCE and low correlation between EVA & EPS.

Further Analysis was carried out by assigning ranks to the selected companies as regards different profitability measures and market returns. The results are summarized in the table below:

NAME OF THE COMPANY	RETURN	NOPAT	EVA	EPS	ROCE	RONW	ROS
ALEMBIC LTD. 1	25	22	22	20	13	12	11
ARVIND MILLS 2	1	23	23	26	26	27	27
BANK OF INDIA 3	6	8	8	11	25	10	18
BHARAT PETROLIUM CORPORATION LTD. 4	19	10	10	9	14	15	14
BINANI INDUSTRIES LTD. 5	3	26	26	21	28	29	28
CADILA HEALTHCARE LTD. 6	24	17	17	13	9	7	8
DUTRON POLYMERS LTD. 7	10	28	28	27	27	21	24
GSFC LTD. 8	16	16	16	7	7	9	9
HINDUSTAN PETROLIUM CORPORATION LTD. 9	23	11	11	10	19	22	20
HP COTTON TEXTILES LTD. 10	7	29	29	29	29	30	29
ICICI BANK 11	18	6	6	8	24	19	22
INDIA CEMENTS LTD. 12	9	15	15	19	16	17	16
INDIAN OIL CORPORATION LTD.13	20	3	3	6	12	11	10
INFOSYS TECH. LTD. 14	27	5	5	3	2	2	2
JINDAL STEEL POWER LTD. 15	2	12	12	1	8	3	5
NAGARJUNA FERTILIZERS CHEM. LTD. 16	4	25	25	28	22	26	26
NILKAMAL LTD. 17	17	27	27	17	20	23	23
RANBAXY LABORATORIES LTD. 18	28	21	21	22	18	18	17
RASHTRIYA CHEMICALS FERTILIZERS LTD. 19	15	19	19	25	11	16	12
RAYMOND LTD. 20	26	24	24	23	21	25	25
SAIL LTD. 21	8	1	1	18	1	1	1
SATYAM COMPUTER SERVICES LTD. 22	29	9	9	12	5	8	6
SBI 23	14	2	2	2	23	13	19
SINTEX INDUSTRIES LTD. 24	11	20	20	16	15	14	13
TATA COMMUNICATION LTD. 25	5	14	14	15	17	24	21
TATA STEEL LTD. 26	22	4	4	4	3	4	3
TATA TELY SERVICES (MAMHARASHTRA) LTD. 27	13	30	30	30	30	28	30
ULTRA TECH. 28	12	13	13	5	6	6	7
WIPRO LTD. 29	30	7	7	14	4	5	4
ZEE COMMUNICATIONS LTD. 30	21	18	18	25	10	20	15

The rankings obtained indicate that SAIL is the best performer as regards the profitability measures but it ranks eighth as per its equity returns. On the other hand ARVIND MILLS has very low profitability ratios and still it provides the highest market returns. This clearly points out that the equity returns of a company do not depend only on the profitability of the firm. To prove this result statistically and to search out the best profitability measure for Indian Industries, Stepwise Regression Analysis was carried out between Average Market Price per Share and the Profitability Measures in order to estimate the relationship between them.

The various estimated Regression Equations were as under:

MP = 228.566 + 18.477 ROCE R^2=0.442
MP = 54.832 + 25.889 RONW R^2=0.315
MP = 323.28 + 0.103EVA R^2=0.134
MP =133.998 + 34.899 ROS R^2=0.264
MP= 217.446 + 0.52 EVA + 14.401 ROCE R^2=0.221
MP = 30.297 + 0.22 EVA + 43.629RONW-30.111ROS R^2=0.331

Correlation Analysis:

	RONW	ROS	ROCE	EVA
MP	0.561	0.514	0.442	0.367

The following deductions were made thereby:

- The size of the intercept term is very high indicating that share prices are determined by a number of other variables which have not been included explicitly in the model.
- The fact is further verified by the low values of R^2 throughout.
- Coefficients of RONW and ROS are found to be statistically significant but since RONW has greater contribution in explaining the total variation in the Share Prices, we can consider ROCE to be a better measure for reflecting profitability of Indian Industry. But RONW explains only 31% of the total variation in the share prices supporting the dominance of other determinants rather than the profitability measures.
- EVA has the lowest correlation with the share prices and it explains only 13% of the total variation in the share prices. There is no indication whatsoever that EVA is conveying any statistically significant signals different from traditional performance indicators.

Thus our hypothesis of the study stands rejected. This analysis reveals that the so-called newly innovated concept of EVA has not correlated very well with the shareholder's wealth. Thus the shareholders cannot rely only upon the profitability measures of a firm in order to make their investment decisions.

MAJOR FINDINGS AND CONCLUSIONS

The above study clearly points out the following major findings:

- Most profitable companies do not necessarily perform well in maximizing their shareholder's wealth.
- RONW also explains relatively a better proportion of the total variations in Equity Returns.
- Though coefficient of variation for EVA is the least, it has not correlated well with the shareholder's wealth.
- Equity Prices and the Profitability measures have a very weak statistical relationship.
- Non-quantifiable factors are more dominating in explaining the patterns of fluctuations in Equity Returns.

Thus Profitability measures are not the sole indicators of the Corporate Success and hence the shareholders must not rely upon only these measures for their investment decisions.

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ANNEXURE

LIST OF FORMULAE

ECONOMIC VALUE ADDED

Economic Value Added of a company in a year is calculated by deducting the capital charge from the Net Operating Profit after Tax (NOPAT) of that year. That is, $EVA_{it} = NOPAT_{it} - KO_{it}$ (Total capital Employed),where, EVA_{it} is the Economic Value Added of the company 'i' at the financial year 't', KO_{it} is the weighted average cost of long term capital sources of the company 'i' in the financial year 't'.

NET OPERATING PROFIT AFTER TAX

The NOPAT of a company is calculated as the difference between the Profit before Interest and Tax and the amount of Tax paid by the company. Symbolically,

$NOPAT_{it} = PBIT_{it}(l-T_{it})$

Here, $NOPAT_{it}$ is the Net Operating Profit after Tax of company 'i' in the financial year 't'.

$PBIT_{it}$ is the Profit Before Interest and Tax of the company 'i' in the financial year 't'.

Tit is the effective tax rate of the company 'i' during the financial year 't'.

OVERALL WEIGHTED AVERAGE COST OF CAPITAL

The overall cost capital is calculated by finding out the weighted average of cost of equity capital, cost of preference capital (if any) and the effective cost of debt. Symbolically it is denoted as,

$KO_{it}= Ke_{it}\, We_{it} + Kp_{it}\, Wp_{it} + Kd_{it}\,(1-T_{it})\, Wd_{it}$............(1)

Here, KO_{it} is the weighted average cost of capital of the company 'i' in the financial year 't'.

Ke_{it} is the cost of equity capital of the company 'i' in the financial year 't',

We_{it} is the percentage of equity capital to the total capital employed of the company 'i' in the financial year 't',

Kp_{it} is the cost of preference share of the company 'i' in the financial year 't', Wp_{it} is the percentage of preference capital to the total capital employed of the company 'i' in the financial year 't',

Kd_{it} is pre tax cost of debt capital of the company 'i' in the financial year 't'.

Wd_{it} is the percentage of long term borrowings to the total capital employed of the company 'i' in the financial year 't'

T_{it} is the effective tax rate of the company 'i' in the financial year 't'. It is the rate of tax paid on the profit before tax.

COST OF EQUITY

The cost of equity capital is calculated by using the Security Market Line equation in the Capital Asset Pricing Model, which is given as,

$Ke_{it}=R_{ft}+(R_{mt}-R_{ft})\beta_{it}$

In this equation the Ke_{it} is the cost of equity capital of i^{th} Company in the financial year 't',

R_{mt} is the return from the market portfolio during the financial year 't',
R_{ft} is the risk free rate of return during the financial year 't',
β_{it} is the Beta value of the company 'i' in the financial year 't'.
The risk free rate of return (R_f) is the return available from the risk free asset in the market State Bank of India (SBI) is the largest public sector bank with branches operating all over India. Therefore, in the present study fixed deposits accepted by SBI is taken as the proxy of the risk free asset. Its interest rate on fixed deposits for one year period as on 1 April of a year 't' is taken as the risk rate of return for the year 't'.
In the equation, the value β_{it} is an index of systematic risk of i^{th} company during the financial year 't'. It is measured as ratio of covariance between individual security returns and market return to the variance of the market return. It can be given as,

$$\beta_{it} = \frac{COV(R_i, R_m)}{VAR(R_m)}$$

Where, $Cov(R_i, R_m)$ is the covariance of returns of i^{th} security with market return and $Var(R_m)$ is the variance of the return from the market. The return from the market is measured by using BSE SENSEX as the proxy of market price movement. Percentage of change in the monthly average of BSE SENSEX is taken as the return from the market. Similarly the rate of change in the monthly average price of the equity share of a company 'i' is taken as the return from the equity share. Using these monthly returns from the market and equity share of the company 'i' of the financial year 't' the beta value of the company T is calculated for the financial year 't' as mentioned above.

COST OF PREFERENCE SHARE CAPITAL

Dividing the annual preference dividend by the closing balance of the preference share capital of the company 'i' in the financial year 't' the cost of preference capital of the company 'i' in the year 't' is calculated.

PRE TAX COST OF DEBT

The pre tax cost of debt of the company 'i' in the financial year 't' is the ratio of interest paid by the company on the total long term debt funds of the financial year 't'. That is, interest paid during the financial year 't' is divided by the total amount of long term debt fund existing at end of the financial year 't' in the balance sheet of the company 'i' is taken as the pre tax cost of debt. It is given as
$KD_{it} = (I_{it} / LD_{it}) \times 100$
Here, KD_{it} is the pre tax cost of debt of the company 'i' in the financial year 't',
I_{it} is the interest paid by the company 'i' during the financial year 't',
LD_{it} is the long-term Borrowings at the end of the financial year 't'.
After calculating the cost of equity share capital, cost of preference share capital and the after tax cost of debt of the company 'i' in the financial year 't' the weighted average cost of capital of the company is calculated as per the equation.

RETURN ON SALES

$$ROS = \frac{NOPAT}{Total\ Sales}$$

RETURN ON CAPITAL EMPLOYED

$$ROCE = \frac{NOPAT}{Total\ Investment}$$

RETURN ON NET WORTH

$$RONW = \frac{NOPAT}{NetWorth}$$

EARNINGS PER SHARE

$$EPS = \frac{NOPAT}{No. of\ Equity\ Shares}$$

FACTORS INFLUENCING INVESTOR BEHAVIOUR: AN EMPERICAL STUDY IN PUNJAB

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ABSTRACT
The Indian capital market has been one of the most preferable areas of investment during the last decade for investors both retail & wholesale. This paper aims at identifying the most affecting and the least affecting factors influencing investor behavior in Punjab with the help of modified questionnaire. The questionnaire included thirty-five items that belong to five categories: self-image/firm-image, accounting information, neutral information, advocate recommendations and personal financial needs. Also an attempt has been made to identify the sector which have outperformed in comparison to benchmark SENSEX for the period of 1999 to 2008. The result of the survey concluded that the behavior male and female investing in stock market in Punjab have almost the same set of factor that influence their behavior.

KEYWORDS
Self image, firm image, neutral information, Investor behavior, Behavior finance, Independent sample T - Test.

INTRODUCTION: BEHAVIORAL FINANCE
It is area of finance that proposes psychology-based theories to explain stock market anomaly. In behavioral finance, it is assumed that the information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes.

In addition, behavioral finance places an emphasis upon investor behavior leading to various market anomalies. Investor finance also helps in answering certain questions: Why, when all the evidence shows investors cannot beat the market on any systematic basis; how can we explain the stock market "bubbles"; why do investment analysts have so much difficulty in identifying under- and over-valued stocks; why do stock prices appear to under-react to bad news; why do acquisitions on average turn out to be unsuccessful etc. A better understanding of behavioral processes and outcomes is important for financial planners because an understanding of how investors generally respond to market movements should help investment advisors devise appropriate asset allocation strategies for their clients.

Indian capital market (Bombay Stock Exchange) was established in the year 1875. The number of companies keeps on changing from time to time and all statistics are published in www.bseindia.com. For Jan, Feb and Mar 2009 Total numbers of companies (Excluding Permitted Companies) were 4925, 4924 and 4929. Also the market capitalization has also increased to Rs 10950.43 cr in Oct 2010.

The trading volume of shares has fluctuated strongly at national Stock Exchange.

TABLE 1: VOLUME OF SHARES TRADED IN NIFTY

Date	Volume of Shares Traded at NIFTY
2-Jan-08	81305366
1-Feb-08	106716699
3-Mar-08	150762989
1-Apr-08	119878713
2-May-08	131260266
2-Jun-08	118396812
1-Jul-08	164469220
1-Aug-08	178077599
1-Sep-08	82996531
1-Oct-08	149863209
3-Nov-08	240443755
1-Dec-08	257834565
2-Jan-09	226681072
2-Feb-09	235281717
2-Mar-09	194233262
1-Apr-09	319442080
4-May-09	363866099
1-Jun-09	464256409
1-Jul-09	289982752
3-Aug-09	277002677
1-Sep-09	332639046
1-Oct-09	224761213
3-Nov-09	319392344
1-Dec-09	301878674
4-Jan-10	148652424
1-Feb-10	226819473
2-Mar-10	233127111

Source: www.nseindia.com

CHART 1

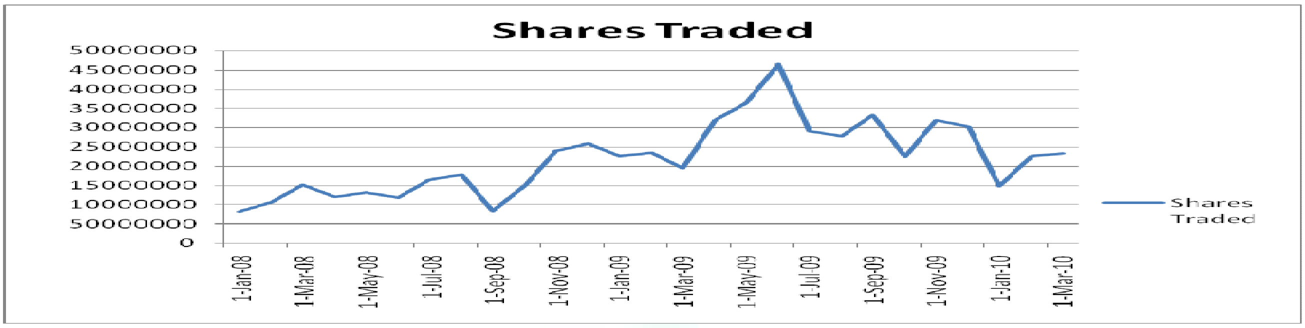
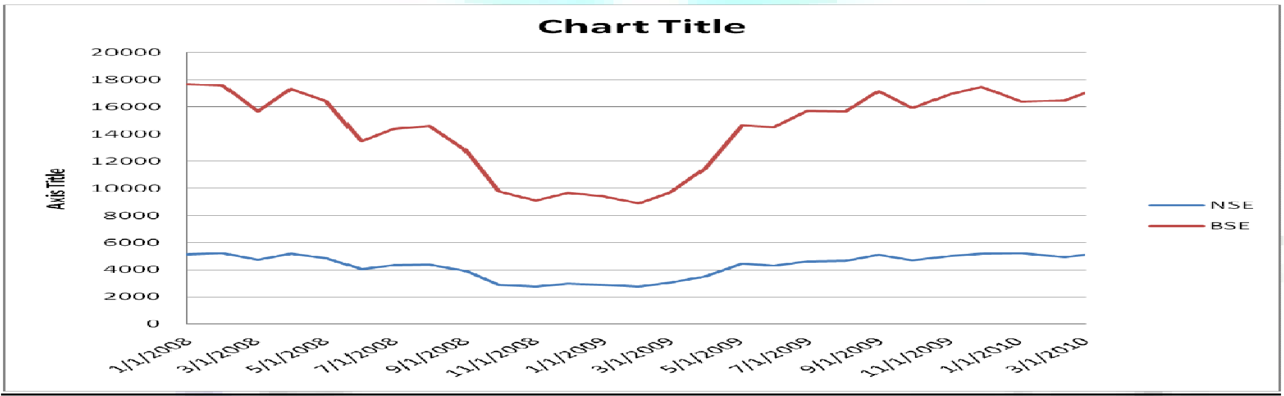


TABLE 2: NIFTY AND SENSEX SINCE JAN 2008 TO MARCH 2010

Date	NSE	BSE
1/1/2008	5137.45	17648.71
2/1/2008	5223.5	17578.72
3/3/2008	4734.5	15644.44
4/1/2008	5165.9	17287.31
5/2/2008	4870.1	16415.57
6/2/2008	4040.55	13461.6
7/1/2008	4332.95	14355.75
8/1/2008	4360	14564.53
9/1/2008	3921.2	12860.43
10/1/2008	2885.6	9788.06
11/3/2008	2755.1	9092.72
12/1/2008	2959.15	9647.31
1/1/2009	2874.8	9424.24
2/2/2009	2763.65	8891.61
3/2/2009	3020.95	9708.5
4/1/2009	3473.95	11403.25
5/4/2009	4448.95	14625.25
6/1/2009	4291.1	14493.84
7/1/2009	4636.45	15670.31
8/3/2009	4662.1	15666.64
9/1/2009	5083.95	17126.84
10/1/2009	4711.7	15896.28
11/3/2009	5032.7	16926.22
12/1/2009	5201.05	17464.81
1/4/2010	5225.65	16357.96
2/11/2010	4922.3	16429.55
3/2/2010	5088.7	16994.49

CHART 2



REVIEW OF LITERATURE

Economics and Finance (2005) the objective of this paper was to identify significant personal and environmental factors that influence investment behavior and to specify the investment decision-making process, particularly with respect to female investors. It was expected that the results presented here will help readers to consider new approaches to investment education. Specifically, this chapter aims to: (a) explore differences between men and women in a variety of financial behaviors, investment decision-making process; (b) identify patterns of investment involvement and learning preferences; and (c) determine socio-economic and behavior factors that explain gender differences in specific investment behavior (portfolio diversification).

Hassan (2004) aimed at identifying the most and the least influencing factors on the UAE investor behavior. It developed a modified questionnaire. The questionnaire included thirty-four items that belonged to five categories. The main findings: (i) accounting information or the classical wealth–maximization criteria is the most influencing group on the UAE investor behavior; (ii) neutral information is the least influencing group on the UAE investor behavior; (iii) two factors unexpectedly had the least influence on the behavior of the UAE investors' behavior, namely religious reasons and the factor of family member opinions.

Love Inness (2003) this study has identified and characterized segments of individual investors based on their shared investing attitudes and behavior. A behavioral finance literature review reveals five main constructs that drive investor behavior: investment horizon, confidence, control, risk attitude, and personalization of loss. Ninety individual investors were surveyed via questionnaire on these constructs. A cluster segmentation analysis identified four main segments of individual investors: 1) risk-intolerant traders; 2) confident traders; 3) loss-averse young traders; conservative long-term investors. Each segment purchased different types of stocks, used different information sources, and had different levels of trading behavior.

Mc adam Anna (2009) has examined the simultaneous trading behavior for eighteen investor classes in target and bidder firm shares around a takeover proposal. These eighteen investor classes constitute all of the investors in the trading environment. Using a buy-sell imbalance indicator and a buy-to-sell ratio for the analysis, it was expected that observable behavioral differences would manifest themselves on the basis of informedness, and in turn the informed investor class under a takeover event identified. The empirical results find that fourteen investor classes do not trade however in the target and bidder firm shares. For the remaining investor classes which do trade; these comprise the domestic domiciled investor categories (1) nominees, (2) superannuation funds, (3) incorporated companies, and (4) individuals. It was found that with the exception of the nominee investor class, the investors demonstrate trading behavior which is consistent with their being uninformed; the trading behavior was found to reflect a general buying activity which was unrelated to the takeover event. The nominee investor class on the other hand, trade in a manner which closely resembles the takeover firm share price movements. This trading behavior by the nominees in light of a profit maximizing motivation, leads this paper to conclude that it is this investor class who for a takeover event, were the informed.

Sahu, Jaisawal and pandey (2009) to studied the buying behavior of the consumer towards the life insurance policies in India. Before the opening of indian market for Multinational Insurance Companies, Life Insurance Corporation (LIC) was the only company which dealt in Life Insurance and after opening of this sector to other private companies, all the world leaders of life insurance have started their operation in india. With their world market experience and network, these companies have offered many good schemes to lure all type of Indian consumers but unfortunately failed to get the major share of market. Z-test was applied to find out the significant differences between male and female investors in context to life insurance. The result concluded that the perception of the male and female investors were same.

After studying the review of literature scope of the study is to know about various aspects of stock market and its performance in India. Researcher has conducted a survey to know the views of investors about the stock market and factors affecting their behavior. Our study is confined only to Lovely Professional University in Jalandhar, Punjab.

An attempt has been made to examine the sectoral indices like Metal, Oil & Gas, Consumer Durable, Auto, PSU, I.T, Health Care and FMCG indices of Indian stock market so as to know whether they out performed or underperformed during the last few years. Also to identify the factors that affects the investors' behavior investing in the Indian stock market. As a part of the study we have surveyed both and male and female so as to know whether they are affected by the factors identified by the researcher i.e. Selfimage, accounting information, neutral information, advocate recommendation and personal financial needs.

RESEARCH METHODOLOGY

The present study being conducted follows a descriptive research design as the data would be responses from a sample containing a large no. of sources. It is a cross section of the situation design of the descriptive studies including the nature and the analytical method. The questionnaire Method is used for collection of primary data by getting the questionnaires filled up by the people living at jalandhar who invest in stock market.

The secondary data includes material collected from: Magazines and Bulletins: - NSE News Bulletin, LSE Bulletin Etc, Internet:- www.nseindia.com, www.bseindia.com and others.

The study is been conducted in Jalandhar, so due to certain constraints the sample size chosen for the research is 300. But 25 questionnaires out of the total was rejected as they were not been filled properly. The selection of investors who invest in the stock market was done on the basis of random sampling. The time period of the study is between May 2010 to August 2010.

Independent Sample T - test has been applied to check the behavior aspect of the investors.

TOOL USED FOR DATA ANALYSIS

Independent Sample T – Test - Statistic used to compare means of two sets of scores, each set collected from a different set of people or collected about a different set of stimuli.

From the research conducted earlier in Dubai and other countries following are the factors that have been influencing the behavior of investors. So the same factors has been taken to study their applicability in Indian context

TABLE 3

Self Image/Firm Image	Product and Service
	Reputation in Industry
	Get Rich
	Firm Status
	Community Development

Accounting Information	Stock Merchantability
	Expected Corporate Earnings
	Financial Position
	Dividend Paid
	Expected Dividend
	Past Performance

Neutral Information	Government Holders
	Information from Internet
	Fluctuations in the stock market
	Coverage in press
	Recent price movements
	Statement by government officials
	Economic Indicators

Advocate Recommendation	Broker Recommendation
	Family member recommendation
	Friend recommendation
	Stock holder recommendation
Personal Financial Needs	Diversification
	Availability of funds
	Minimizing risk
	Expectations of loss
	Highest return

HYPOTHESIS TESTING

Hypothesis- The Hypothesis for testing the significance of the test are following:

H0 There is no significant difference between the behavior of male and female towards investment in stock market.

H1 There is significant difference between the behavior of male and female towards investment in stock market.

This paper developed a questionnaire to examine the behavior of the investor. The questionnaire represents five different items self image, accounting information, neutral information, advocate recommendation and personal financial needs. The Respondents are asked to indicate their degree of agreement on a five point rating scale and based on this questionnaire the most important category will be identified.

The reliability of the questionnaire was assessed with Cranach's alpha. As a general rule the coefficient should be greater than or equal to 0.5 is considered acceptable and a good indication of construct reliability. The Cronbach's Alpha for questionnaire is 0.820.

RESULTS & DISCUSSION

ANALYZING THE SECTORAL INDICES WITH RESPECT TO SENSEX

In this analysis, researcher are analyzing the broader Sensex index with the major sectoral indices Of the Indian stock market like Auto index, Banking index, Consumer Durable, FMCG, Health Care, I.T, Metal, PSU and Oil & Gas index.

The key Purpose behind analyzing this is to know that which sector had outperformed, underperformed and had remain in line with the Sensex benchmark.

YEAR 1999-2000

In the year 1999-00, the benchmark Sensex had provided the negative returns to the investors to the extent of 21 percent. Almost all the indices that we had evaluated provided the negative returns. The major contribution came from the indices like Auto, Consumer durable, HealthCare, I.T, Metal, Oil & Gas and PSU which provided negative returns such as 44 percent, 38 percent, 35 percent, 33 percent, 25 percent, 34 percent, 33 percent respectively. These above stated indices had really underperformed the broader index as their negative returns are much more comparing to the benchmark. The only sector that outperform was the FMCG index, though it also provided the negative returns.

YEAR 2000-01

In the year 2000-01, the benchmark Sensex had again provided the negative returns to the investors to the extent of 18 percent. The major sectoral laggards to this negative sensex returns were the Consumer durable index (down 31 percent), I.T index (down 39 percent). These sectoral indices had really dominated in this bear rally in the Indian stock market. The indices which outperform but with negative returns were the FMCG, Health care, Metal, Oil & Gas and the PSU index. Among the shining star in the market which outperformed with the positive returns for the investors was the Auto Sector, which gained about 5 percent.

YEAR 2001-02

In the year 2001-02, the benchmark Sensex had provided the positive returns to the investors with the gain of about 4 percent (Y-Y basis). Almost all the sectoral indices participated in this bullish phase, with key contributions coming from PSU index (Up 74 percent), Oil & Gas (climbing 72 percent), Metal (climbing 62 percent) and Auto index (Up 35 percent) and also marginal gains coming from the indices like Consumer durables, Health care and the I.T where the returns ranges from 5-20 percent. The only negative surprise was the FMCG sector which clearly underperformed the market with index taking a knock of about 12 percent.

YEAR 2002-03

In the year 2002-03, the benchmark Sensex had provided the biggest positive returns to the investors in its history of trading with the gain of about 73 percent (Y-Y basis). Every sector participated in this massive bull market with all the sectors proving huge returns to the investors. The huge returns came from the indices like Metal index (up 212 percent), Auto index (up 150 percent), PSU index (up 144 percent), Oil & Gas index (up 127 percent), Banking index (up 109 percent), Health care index (up 96 percent) and Consumer durable index (up 93 percent) and also the marginal gains coming from the indices like FMCG and the I.T. The year 2002-03 was the year of broad based rally where every sector made positive returns.

YEAR 2003-04

In the year 2003-04, The benchmark Sensex had again provided the positive returns to the investors with the gain of about 13 percent (Y-Y basis). This year gain the sectoral indices ended up with positive gains and among them there were outperformers, The major being the Banking index (gained 33 percent), I.T (up 26 percent) and Health care index (up 23 percent). The growth in the Auto and the Consumer durable was modest to the extent of 12 percent and 8 percent respectively. The FMCG index closed with the negative return of 5 percent. Really the clear outperformer was the banking index among the indices evaluated.

YEAR 2004-05

The bullish trend continues in the Indian market yet again this year, with the sensex taking a move up by 42 percent (Y-Y basis). No matter it be the FII's, FDI's, domestic institutions or the retail investors, all were pouring huge money into the Indian stock markets with all the growth prospects making India's way. All most every sector participated in this bull run again, with Consumer durable index be the clear outperformer this year with gain of about massive 115 percent, followed by the gains in the FMCG and the Auto sector of about 56 percent and 50 percent respectively.. Banking moved up by 37 percent and the other sector indices gains were just mere about 2-5 percent only. But yet again this year remained for the bulls as the benchmark along with the sectoral indices provided happy trading for the investors by providing positive returns for their investments.

YEAR 2005-06

The year 2005-06 remained bullish for the Indian stock market as the sensex moved north ways, providing the positive returns to the investors with the gain of about 47 percent (Y-Y basis). The bullish trend was taken up by all the other sectoral indices with the maximum gain allotted to I.T, Metal, Oil & Gas index and the banking sector with approx. range of 40 percent. The other sector also made the gains with the range of about 5-25 percent.

This year clearly saw no really outperformance in the sectoral indices compared to the gains made by the broader sensex, but the gains were almost equally distributed among most of the sectors.

YEAR 2006-07

The bullish trend in the Indian market had continued yet again this year with the benchmark Sensex again moving up by about 47 percent (Y-Y basis) with huge selected sectoral indices gain with even more than 10 percent gain in few indices. The metal and the Oil & Gas index shined yet again and being an outperformer with about 121 percent and 115 percent gain respectively. Consumer durable and the banking index, the other key drivers to Indian market with gains of about 95 percent and 61 percent respectively. Other sectors like Auto, FMCG and Health care index made growth which ranges between 2-20 percent. The only sector with the negative returns was the I.T index, which eventually fell about 14 percent.

So, Yet again, another year of bullish trend in the Indian stock market, with gains almost in every index and sector of the market, providing yet another year of happy trading for the investors.

YEAR 2007-08

Finally, the continues bullish trend in the Indian stock market eventually ended in 2007-08. The weak global cues and almost all the developed economies fearing recession the Indian benchmark Sensex fell about 19 percent (Y-Y basis). The negative returns were majorly attributed to the second half of this year with the negative news coming from the world over. This year saw all the negative returns to the sectoral indices with just two shining star with the positive returns be the Oil & Gas with 13 percent and the FMCG only 2 percent. The major key indices contributing the negative trend were the Auto, Consumer durable, Metal, PSU and the Banking Indices with returns (negative) 57 percent, 38 percent, 25 percent and 25 percent respectively.

So, This year provided with the surprise to the investors on the negative side, with the bearish trend emerging in the market with almost all the indices in the deep red making the investors fearing about the future uncertainty with the downward bias.

A SNAP SHOT ON SECTORAL INDICES PERFORMANCES

TABLE 4: CHART INDICATING THE PERFORMANCE OF SECTOR INDICES TO BENCHMARK SENSEX

Indices/Time Period	19 99-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Auto	Under performer	Under performer	Out performer	Out performer	Under performer	Out performer	Under performer	Under performer	Under performer
Consumer Durable	Under performer	Under performer	Out performer	Out performer	Under performer	Out performer	Under performer	Out performer	Under performer
FMCG	Out performer	Out performer	Under performer	Under performer	Under performer	Out performer	Under performer	Under performer	Out performer
Health Care	Under performer	Out performer	Under performer	Out performer	Out performer	Under performer	Under performer	Under performer	Out performer
I.T	Under performer	Under performer	Stable	Under performer	Out performer	Out performer	Under performer	Under performer	Out performer
Metal	Under performer	Out performer	Out performer	Out performer	Out performer	Under performer	Under performer	Out performer	Under performer
Oil & Gas	Under performer	Out performer	Out performer	Out performer	Under performer	Under performer	Under performer	Out performer	Out performer
PSU	Under performer	Out performer	Out performer	Out performer	Out performer	Under performer	Under performer	Out performer	Under performer

ANALYSIS

TABLE 5: CROSS – CORRELATION AMONG VARIABLES

		selfimage	Accountinginfo	neutralinfo	advocaterecm	personalfincialneeds
Self image	Pearson Correlation	1	.336*	.427**	.319*	.518**
	Sig. (2-tailed)		.017	.002	.024	.000
	N	50	50	50	50	50
Accounting info	Pearson Correlation	.336*	1	.381**	.477**	.465**
	Sig. (2-tailed)	.017		.006	.000	.001
	N	50	50	50	50	50
Neutral info	Pearson Correlation	.427**	.381**	1	.452**	.480**
	Sig. (2-tailed)	.002	.006		.001	.000
	N	50	50	50	50	50
Advocate recomm	Pearson Correlation	.319*	.477**	.452**	1	.430**
	Sig. (2-tailed)	.024	.000	.001		.002
	N	50	50	50	50	50
Personal fincial needs	Pearson Correlation	.518**	.465**	.480**	.430**	1
	Sig. (2-tailed)	.000	.001	.000	.002	
	N	50	50	50	50	50

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation has been calculated to find out the degree of correlation between the variables. The "rule of thumb" test says that any correlation greater than (0.7) suggests that there is a strong correlation between the variables. From the above table it can be concluded that all the factors selected are independent of each other and there is no strong correlation among them. So it can be said that the factors are not interrelated and hence study can be conducted so as know the behavior of investor.

INDEPENDENT SAMPLE T – TEST

TABLE NO 6: INDEPENDENT SAMPLE T-TEST TO TEST HYPOTHESIS

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Self image	Equal variances assumed	.131	.719	1.313	48	.195	-1.24932	.95142	-3.16229	.66365
	Equal variances not assumed			-1.389	12.544	.189	-1.24932	.89962	-3.20004	.70140
Accounting info	Equal variances assumed	.397	.532	-.733	48	.467	-.95122	1.29700	-3.55901	1.65657
	Equal variances not assumed			-.694	11.168	.502	-.95122	1.37010	-3.96127	2.05883
Neutral info	Equal variances assumed	.134	.716	.355	48	.724	.50136	1.41038	-2.33441	3.33712
	Equal variances not assumed			.354	11.725	.730	.50136	1.41718	-2.59446	3.59717
Advocate recomm	Equal variances assumed	.005	.942	-.606	48	.547	-.70732	1.16706	-3.05385	1.63922
	Equal variances not assumed			-.613	11.934	.551	-.70732	1.15324	-3.22157	1.80694
Personal fincial needs	Equal variances assumed	.964	.331	-1.094	48	.279	-1.24119	1.13427	-3.52179	1.03940
	Equal variances not assumed			-.909	10.067	.385	-1.24119	1.36583	-4.28173	1.79934

FINDING & INTERPRETATION

The key finding from the survey conducted by the researchers is that majority of the male respondents are serviceman, belongs to the age group of 30-35 & have an annual income of 3.5 – 4.5 lakhs p.a. whereas majority of females respondents are doing service , belongs to the age group of 30-35 & have an annual income of 3.5 – 4.5 lakhs p.a. Researcher found that majority of the female respondents prefer stock market for investment and least preferable are banks as an option for investment, whereas majority of male respondents prefer stock market as a best option for investment and least preferable is post office as an option for investment. Researcher found in the survey that majority of respondents (both male & female) investing in stock market from last 2-4 years and also majority of the investors (both male & female) prefer secondary market for investment and aiming for the short term gain through investment.

Mean shows the relationship between the perceive value of male & female, which is shown in the table 6:

- **Self image:** The result shows that the average of females for selfimage is slightly greater than male. But the significance value is greater than .05, so we can conclude that there is no difference between the behavior of male and female.
- **Accounting Information:** The result shows that the average of females for accounting information is slightly greater than male. But the significance value is greater than .05, so we can conclude that there is no difference between the behavior of male and female.
- **Neutral information:** The result shows that the average of males for Neutral information is slightly greater than female. But the significance value is greater than .05, so we can conclude that there is no difference between the behavior of male and female.
- **Advocate Recommendation:** The result shows that the average of females for advocate recommendation is slightly greater than male. But the significance value is greater than .05, so we can conclude that there is no difference between the behavior of male and female.
- **Personal Financial needs:** The result shows that the average of females for personal financial needs is slightly greater than male. But the significance value is greater than .05, so we can conclude that there is no difference between the behavior of male and female.

CONCLUSION

In the present Economic conditions it can be said that the Indian economy has survived the slow down and in a position to achieve the growth target of 8% for GDP in the coming fiscal, the future of the stock market is quiet bright and from the study we can conclude that the majority of the sectors have outperformed in context to SENSEX in the past. The Investors both male and female investing in the stock market at Jalandhar almost have the same behavior towards investment.

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TEXTING MANIA - A SOCIAL DILEMMA

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ABSTRACT

The purpose of this research is to find out the extent youth has been crazy about usage of new gadgets like cell phones, iPod, MP3 players etc. The major focus has been on usage of cell phones for texting. Technological change is occurring all around us every-day. This is a challenging situation. Youth have been witnessing the change in technology as against their life style. However this change in technology is not without a cost, and the major cost being waste of time on irresponsible texting. With the evolution of the internet, a special innovation came into being known as social networking. Basically social networking is a way in which one can keep himself connected to his near and dear ones in some way or the other. Social networking has enabled us today to connect easily. The objective of this research includes observing & ascertaining the habits of texting & its impact on the youth. Also the purpose of the research is to provide tips for responsible parenting. The exercise is likely to be just an initiative to put forth social evils erupting among youth due to too much texting addictions. It tries to provide workable pointers to successfully tackle such real life situations.

KEYWORDS

Addictions, Communities, Semantics, Service Provider, Social networking.

INTRODUCTION

With the evolution of the internet, a special innovation came into being known as social networking. Basically social networking is a way in which one can keep himself connected to his near and dear ones in some way or the other. In the early 19th century social networking involved media like letter, mails, telegrams, phone calls, but today it includes media like SMSs(Texting), e-mails, blogs, MMSs, scraps and many more. Social networking has enabled us today to connect easily and the best part of it is that most of the online services like chatting, emailing, texting etc are totally free. This has helped even the middle and the lower classes to enjoy the services. It is therefore a big merit of this feature that cuts on the expenditure of ISD call rates. We can easily get connected to our peers or family members, in case they are living in some other city or country. Social networking is one of the hottest trends today and corporate world and even end-users are equally scrambling to leverage this technology. To build their brands, tap new customers, engage deeply with existing ones, creating new friends and relationships and cultivate a sense of community.

Social networking is emerging as a powerful tool these days. Events which happen around the world appear first on websites such as Orkut, LinkedIn, Facebook, Flickr etc before appearing on newspaper or news channels. Indians spend most of their time on such websites or even on mobile handsets texting SMSs to their peers continuously and instantly. These websites / communities are easily accessible on mobile phones making it easy to stay connected while people are on the go.

End-users have undoubtedly chosen mobile phones as a best tool to be able to be in close (?) affinity between the friends and peers creating bondage actually at a cost. The key to building such relationship is communication. Now even corporate have a chance to break down the walls of complex, ineffective hierarchies and to empower employees to get things done.

These tools are simple, fun, engaging and inspirational. These tools have brought fresh winds of change. Social networks are being used by one and all seeking new ways in which to communicate and engage (?) with one another.

When people hear from the term Web2.0 they think it's only about social networking, sharing personal updates on twitter or facebook or watching funny (?) videos on YouTube. Sometimes social networker shares too much of his personal data which creates avenues for security concerns.

FIG. 1.1 ELEMENTS/ TOOLS OF SOCIAL NETWORKING

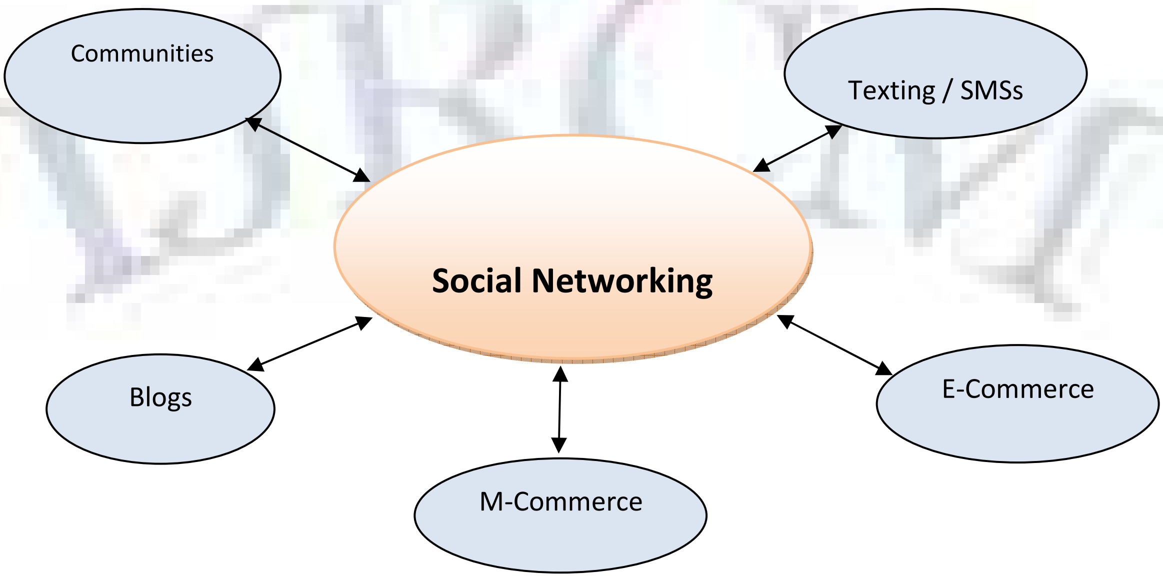
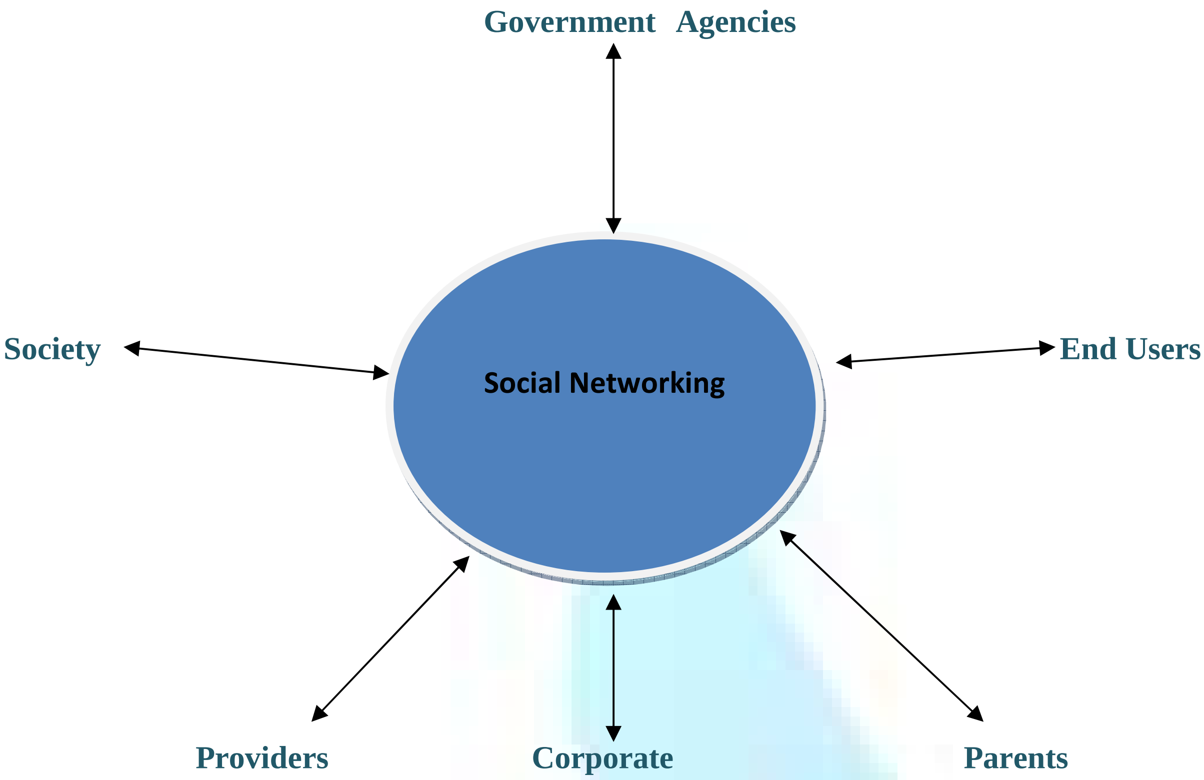


FIG. 1.2 STAKE HOLDERS OF SOCIAL NETWORKING



TEXTING

WESTERN WORLD PERSPECTIVE

With the proliferation and widespread adoption of SMS technology comes problems unheard of "Thumbs down for text messages - they are officially addictive. - The Telegraph

"Scandinavian treated in clinic for SMS addiction" - The Register

The number of texting addicts is on the rise. A internet therapy center in Scandinavia has treated around 60 addicts since 1998 and this number is believed to be under reported.

ASIAN PERSPECTIVE

Asia has not been spared either. According to Telecoms Korea, 3 out of 10 Korean high school students who carry mobile phones are reported to be addicted to mobile phones. The report also added, a big 21% of 270 high school students carrying cell phones responded that they feel anxious when their handsets are not in their hands and 8% of them said that they feel very frustrated without mobile phones. 10% of the respondents already reported of pain in the shoulder or wrist. This is repetitive strain injury - pressing small keyboards of cell phones that cause poor blood circulation and pain in the shoulder.

HABIT- I- COMPULSIVE MESSAGING

The immediate effect of SMS text addiction, called by some as compulsive text messaging, is repetitive strain injury. This dries out the lubricating fluid between tendons of your hands, shoulders and wrists. Those exhibiting this type of addiction are also prone to depression, anxiousness and sleep disorder, aside from the monetary effects to the person and his/her family.

HABIT- II- DENIAL PHASE

Many people affected by this technology addiction are still on their denial stage claiming there is no such thing as SMS texting addiction. In the early days of marijuana and cocaine, addiction also went unrecognized until people realized they were addicted into it and it was already too late for them to respond rationally.

HABIT-III- WORSE THAN ALCOHOLICS & DRUGS

Why are people quick to look down on alcoholics or drug addicts, but then go out and spend 12 hours in Internet chat-rooms? Compulsive text messaging are sending people to clinics for treating their technology addictions. And this number is rising.

WORLD HEALTH ORGANIZATION'S TAKE ON TEXTING

The World Health Organization has defined addiction as a pathological relationship with a mood-altering substance or experience that has life damaging consequences. So this means an addiction need not be with a mood-altering substance like marijuana or alcohol but it could also be an experience or an activity like Internet chatting or SMS text messaging.

SYMPTOMS AND PERCEPTIONS

People should start getting serious about this problem. Somebody close to you may be into it but you refuse to recognize that it exists. Learn to recognize the common signs like –

- Denial
- Tolerance
- Withdrawal
- Obsession
- Compulsion
- Isolation

These signs are common symptoms in almost all addictions.

RESEARCH METHODOLOGY

The purpose of research was to find out the extent youth has been crazy about usage of new gadgets like cell phones, iPod, MP3 players etc. The major focus has been on usage of cell phones for texting. The researchers being from a reputed educational institution from Pune, found it easier to collect data from both the sources viz. Primary and Secondary.

The type of methodology adopted for this piece of research is on the basis of explorative type.

The data collection methods were as follows:

- Questionnaire
- Interviews
- Record review
- Observations

PRIMARY DATA

Data that has been compiled for a specific purpose, and has not been collated or merged with others is called a primary data. In this research researchers have collected responses through a structured questionnaire. The questionnaire was distributed to students from undergraduate and postgraduate courses. The profile of the respondents was representative enough on the following parameters:

- Age
- Gender
- Locality
- Employment status
- Marital status
- Education
- Class

SOURCE, VOLUME & SAMPLE

Since the researchers work in one of the reputed educational institution in the city which has multi-disciplinary courses, it was possible to collect information from about 1% of the population in the institution viz. about 30,000 students (Universe) out of which survey was conducted in two out of five colleges from the educational campus, the strength of whose is around 6,000 (population). Hence questionnaire was distributed to 60 students from both the colleges together.

JUSTIFICATION OF SAMPLE

Since the purpose of research was to articulate representativeness of the social dilemma, researchers found it necessary to collect data only from accessible no. of students who would quickly record their responses. The matter is documented only to put up food for thought for responsible parenting.

SECONDARY DATA

Secondary data is data collected by someone other than the user. Common sources of secondary data for social science include censuses, surveys, organizational records and data collected through qualitative methodologies or qualitative research.

In this research data was collected also through:

- Magazines & periodicals
- Websites & blogs
- Articles of social activists on Bad Habits and Social Vices
- Interviews of certain categories of respondents

HYPOTHESIS

- "Texting has caught up as a fever among the youth."
- "Texting is invariably amounting to wasteful expenditure."
- "Texting rarely derives pleasure."

Researchers collected information through qualitative and quantitative data to test the above three hypothesis. It was found that :

- First hypothesis is acceptable on the basis of data collected through the answer of question no 1. of the questionnaire without any exception it was summarily accepted that extensive messaging is an IN thing.
- Second hypothesis was also put to test by putting up different questions to the respondents and unstructured interviews conducted by the researchers. It was accepted that messaging amounts to wasteful expenditure.
- While testing the third hypothesis a few emotional questions were posed before the respondents. It was astonishing to find that, they derived pleasure (?) of strange genre.

ANALYSIS OF DATA

After carefully scrutinizing the set of responses received from all types of respondents researchers could summarize their views as detailed below:

- 68.3% respondents entirely agree that cell phones are extensively used for messaging (Texting)
- 88.3% respondents send messages mostly to friends & peers, however remaining categories of respondents include parents (8.3%) and others(3.3%)
- It is found that no. of messages sent per day is put to 100. However a few respondents have crossed the limit of 100 SMSs per day. This means the fever of texting is slowly catching up with the Indian youth.
- However it surprising to note that the users for MMS service is negligible. Almost 98% respondents do not use it. Reason could be charges payable on such service are substantially high.
- It is generally found internet on cell phone is not popular among the student because of the cost associated with it.
- During this research it was observed that online chat communities are popular among respondents. However in the order of preferences Orkut is one of the most popular and frequently used portals. Respondents mostly access these portals on their home PCs, WIFI in college and Net Cafes.
- Majority of the respondents are pre-paid subscribers and also have free SMS packs.
- It is observed that the respondents under enquiry moderately spend up to Rs. 100/- on messaging. However it is also not very heartening to note that parents do not monitor this expenditure closely enough.
- It is also observed that the messaging has been extensively used for exchanging jokes. Therefore even though it lightens the atmosphere and reduces stress the expenditure on such messaging should always be considered as a luxury and not a need.
- As regards usage of coding method in messaging, it is really surprising to find that almost majority of respondents do make use of coding for conveying messages. It can be inferred that usage of coding denotes secretive attitude of the sender as well as the receiver of the messages. It could also lead to unpleasant situation.
- It is heartening to reveal that only handful of 2% respondents feel insulted when asked by parents. At the same time about 21% respondents sometimes react to the parents when asked.
- When asked about what is achieved out of messaging, almost 85% of respondents said that:
  - It is convenient
  - It gives them pleasure(?)

o It is a medium of expression

- Question was also asked about language or semantic used in messaging; it was stunning to find that most the messaging uses friendly & motivational language. However to a certain degree language used is also found to be either arousing or abusive.
- 27% respondents are in favour of restrictions imposed by parents on messaging. However remaining 73% respondents have either denied such restrictions or could not make up their mind for the same.
- It is astonishing that the set of responses were equally divided into two different groups viz. Uncomfortable and angry on one side and No difference on the other. This was the response to question asked – What if your asked to keep your cell phone away ?

OBSERVATION

All though it is apparent that there are various elements of social networking such as blogs, e-commerce, m-commerce, communities and texting/ SMSs, it is the responsibility of every stake holder to see to it that candle in not burnt from both the sides. It therefore follows that the stake holders such as Government, Service Providers, Society etc tend to over look social evils of the media of texting. It may ruin the social fabric and will have dent to the family system in India. Therefore it calls for responsible parenting. It is the duty of the elders in the family not only worn the juniors but also protect them from habituating the evil practices. The suggestive majors are covered here in after. (Plz. see diagrams 1.1 & 1.2)

TIPS FOR HELPING YOUR CHILDREN TO OVERCOME THEIR TEXT ADDICTION

Put the Phone Down and Put your Thumbs in the Air. How parents can help their children overcome their text addiction.

- Text messaging at the dinner table, in the classroom, at the beach, while driving, and everywhere else has become common practice for children now-a-days.
- Face to face conversations have become a chore and more parents are growing concerned that not only are their child's grades suffering, but they are also missing out on valuable real-world experiences.
- Understanding the need to educate these children on texting responsibly has become immensely important.

Here are few tips for parents looking to stage an intervention with their text-addicted children.

1. Have "the talk" – Opening the doors of face to face communication is a big step. Sit with them and express your concerns about the negative effects, constant texting has on them.
2. Help them find a hobby – Many children use texting as their default solution to boredom. Instead, encourage your child to pursue other activities that they may enjoy, like painting, acting, reading, or athletics.
3. Limited Text Plans – By limiting the number of texts your cellular plan has, you reduce the number of texts your child will be able to send. Limited plans do run the risk of overage charges so make sure your child knows the repercussions of over-texting. **If not…**
4. Let them pay the bill – If your child texts so much that you end up with thousands of rupees in cell phone charges, having them help pay for part of the bill will teach them responsibility. Texts don't grow on trees.
5. Film them in the act – Bust out the video camera and film your child every time you catch them with their heads down and their thumbs a blaze. Once you gather enough 'evidence,' play them the tape. Allowing them to see how much they are missing may be enough to open their eyes.
6. Text-free zone – Allow certain times where phones aren't allowed, such as dinner or family outings. This will help them to control how much time they put into texting and when.
7. Avoid the extras – Call your service provider to block third-party applications on your child's handset. Explain to your children – ringtones, games, apps – they all cost money and can contain explicit content. If an explanation doesn't cut it, take control and limit the programs and features your child can and cannot access with their phone.

CONCLUSION

Daily, we've seen new SMS applications introduced into the market. The market for SMS texting is getting more lucrative intended to make people absorb as much of this technology in their daily lives. The more SMS texting becomes a part of us, the more addicting it will become, the more problems we will have to deal with in the future. Simply, treat technology as a tool and never an extension of our lives. As long as we keep on that perspective, chances of being manipulated by these latest gadgets, gizmos and applications will be slim.

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CLIMATE CHANGE: A MAJOR ISSUE IN THE SUSTAINABLE DEVELOPMENT OF INDIA

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ABSTRACT
The grave challenge that the world today faces is that of climate change. This change has been the harbinger of negative development and its more pronounced impacts are to be witnessed by the developing countries whose economies thrive on climate–sensitive sectors like agriculture – India being one of them. Climate change and sustainable development are interlinked. Sustainable development encompasses in itself "intergenerational responsibility." The present paper is an attempt to bring forth the vulnerabilities that India is prone to due to the climate change. Further it points that it is necessary to focus on poverty, land degradation, access to water and food and human health to effectively address to climate change concerns. Given the central role of energy in reducing poverty, the paper suggests that innovative technologies in energy sector are required to meet the challenges. Lastly, the paper concludes with various initiatives to be dealt with at an individual and at the national level to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

KEYWORDS
Challenge, climate, mitigation.

INTRODUCTION
Climate change has become the scorching issue the world over. As the proverb goes "there is no such thing as free lunch," the paramount cost that countries will have to incur is on mitigating climate change because of incessant exploitation of natural resources and the path of blind development that the countries have adopted. Climate change refers to the variation in the Earth's global climate or in regional climates over time. It describes changes in the state of the atmosphere over time scales ranging from decades to millions of years. Climate change has been defined by many in many ways. While some define it as an offshoot of Earth's natural processes, others define it as a result of human activities. Striking a balance between these two varying perspectives, climate change is defined as "a change which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". (United Nations Framework Convention on Climate Change)Human actions have been the major contributor of global warming in the recent decades. Thus, whatever choices we make today, will have a significant bearing on the climate of the future. This makes climate change an alarming concern at the fore of sustainable development.

Brundland Commission captures "sustainable development" as a notion of discipline….Disciplining our current consumption. This sense of "intergenerational responsibility" is a new political principle, a virtue that must now guide economic growth. The industrial world has used so much of the planet's ecological capital that the sustainability of future life is in doubt. That can't continue. Included in this perception is the conviction that economic development must consider both protection of natural resources and maintenance of environmental quality. The descriptive term for this perception is sustainable ecological development.

LITERATURE REVIEW
Moomaw, William, et.al., (1999) opined that the economic logic of the Kyoto Protocol is that without such an agreement, countries will not have the proper incentives to address the threats from global climate change and therefore develop sustainably. In economic terms, the emission of greenhouse gases in the world economy is a classic externality—greenhouse gas emitters do not currently pay the cost of climate change's harmful effects. Because of these perverse incentives, disruption of the global climate will proceed at an excessive pace. If such a pace is not tempered, substantial costs will accrue in terms of commerce and the environment alike. Ironically, much of the economic debate surrounding the protocol has focused on implementation costs alone rather than balancing those implementation costs with the benefits of avoiding the harmful effects of climate change and developing sustainability.

Parikh, Jyoti K., and Parikh Kirit (2002) commenting on India's perceptions on the problem of climate change and sustainable development; they said that not all possible consequences of climate change are yet fully understood, but the three main 'categories' of impacts are those on agriculture, sea level rise leading to submergence of coastal areas, as well as increased frequency of extreme events. Their study focused on the need for an approach to mitigate the threat of climate change that is equitable and one that can accommodate differing perspectives on risk need to be elaborated.

Sathaye, Shukla and Ravindranath (2006), advocate the ways to pursue sustainable development strategies that contribute to mitigation of climate change through adoption of cost-effective energy-efficient technologies, forest conservation, adoption of participatory approach to forest management, rural energy, irrigation water management and rural development and efficient, fast and reliable public transport systems such as metro-railways can reduce urban congestion, local pollution and greenhouse gas emissions.

Sangal, P. P., (2008) summarized that eight national missions (solar mission, energy efficiency, sustainable habitat, water, Himalayan ecosystem, green India, Eco-green agriculture and knowledge) have been specifically outlined to simultaneously advance India's development and climate change related objectives of adaptation and GHG mitigation. However, quantitative goals towards emission reduction have not been set. Experts suggest working out quantitative goals and specific institutional mechanisms and regulations in respect of all eight missions, besides evolving certain feasible and verifiable indicators for each mission for their impact assessment.

THE PROBLEM
The solar energy, passing through the atmosphere, is absorbed by the Earth's surface and a significant part of it is reflected back into the atmosphere. However, the atmosphere of the Earth contains small quantities of carbon dioxide, methane and nitrous oxide (collectively called greenhouse gases (GHGs)) which act as a partial blanket that trap some of the outgoing infra red radiation and reflect it back to Earth thus keeping the surface warmer than it would otherwise be. In the absence of this greenhouse effect (trapping by GHGs) the Earth's mean temperature would be 30°C lower than it is, (Gautam Dutt and Fabiina Gaioli, 2007) which would mean that the Earth would be an ice covered place. Thus, most of the present life forms on the Earth depend on the natural greenhouse effect for their existence. However, increase in the emission of these GHGs due to human activities causes the enhanced greenhouse effect. Global GHG emissions due to human activities have grown since pre-industrial times, with an increase of 70% between 1970 and 2004 (IPCC Report, 2007). Apart from the three natural GHGs

(carbon dioxide, methane and nitrous oxide), the increased emission also includes several "man-made" gases including chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6). Increase in the concentration of these GHGs tends to increase the surface temperatures. This rise in the average temperature of the Earth is called global warming, which is likely to lead to unprecedented climate changes on a global scale threatening the ecosystems of the entire world.

The Intergovernmental Panel on Climate Change (IPCC) projects that the global mean temperature may increase between 1.4 and 5.8 degrees Celsius (C) by 2100. This unprecedented increase is expected to have severe impacts on the global hydrological system, ecosystems, sea level, crop production and related processes. The impact would be particularly severe in the tropical areas, which mainly consist of developing countries, including India.

Behind this prediction, there is an overwhelming fact that we are playing havoc with our environment, upsetting the ecological interdependence. In fact, the present generation is compelling future generations to inherit an unsustainable ecological debt, which will jeopardize the future development and prosperity.

The severity of the problem can be analyzed by the following facts:

- GHG's stay in the atmosphere for long time. The consequences of our present emissions will be borne by the people living in the next century. Anthropogenic and sea-level rise would continue for centuries due to the time scales associated with climate processes, even if GHG concentrations were to be stabilized.
- The delay in coming to the consensus to cut emissions further aggravate the problem as GHG's stock accumulate, locking the future into high temperatures.
- No country can remain isolated from the impact of climate change. One country's emission is another country's problem. Hence, collective action is not an option but a compulsion.
- The developed countries instead of meeting their own obligations are endeavouring to pass the buck to the developing countries. Unless, this issue is mutually addressed, global response towards finding a sustainable solution to the problems of climate change will be seriously impeded.

IMPACT OF CLIMATE CHANGE AT GLOBAL LEVEL

The globe has witnessed the effects of climate change in the recent past. The warming of earth is bringing about massive changes. The heating up of earth is putting much more than usual moisture in the air. Hence, rains are heavier than normal and it falls all in a fewer days. The heat evaporates the moisture in the soil rapidly leading to widespread drought conditions. Heat and cold waves are much higher than normal. The changes in ocean temperatures are modifying the ocean currents, thus creating erratic and extreme weather conditions – creating more intense and frequent hurricanes, storms and tornadoes.

The various challenges posed by the climate change are:

a. The crop yield as well as types of crops that can be grown across regions will have an impact. Moderate warming (increase of 1-3° C in mean temperature) is expected to benefit crop yields in temperate regions, while in lower latitudes especially seasonally dry tropics, even moderate temperature increase (1-2° C) is likely to have negative effect on production in all regions (IPCC Fourth Assessment Report, 2007). In South Asia losses of many regional staples, such as rice, millet and maize could top 10 percent by 2030. In a recent study, the International Commission for Snow and Ice (ICSE) reported that Himalayan glaciers – that are the principal dry-season water sources of Asia's biggest rivers - Ganges, Indus, Brahmaputra, Yangtze, Mekong, Salween and Yellow – are shrinking quicker than anywhere else and that if current trends continue they could disappear altogether by 2035 (Khoday, Kishan, 2007). The above predictions certainly pose a serious threat to agriculture which impacts human lives in many ways. Agriculture provides the food and also the primary source of livelihood for 38.7 percent of the world's total workforce. Thus, the livelihoods of large numbers will be put at risk.

b. At present a whopping 1.1 billion people around the world lack access to water and 2.6 billion people are without sanitation. Climate change is expected to exacerbate current stresses on water resources. By 2020, between 75 and 250 million people are projected to be exposed to increased water stress due to climate change. Climate (IPCC, 2007). Spreading water scarcity is contributing to food insecurity and heightened competitions for water both within and between countries. As the world population expands and the consumption of water spirals upwards, water problems are bound to intensify. By 2025, 40 per cent of the world's population, more than 3 billion in all, may be living in countries experiencing water stress or chronic water scarcity.

c. Nearly 70 % of Earth's surface comprises of water in the form of seas and oceans. Sea level rise under warming is inevitable. Sea level rise is both due to thermal expansion as well as melting of ice sheets. Thermal expansion would continue for many centuries even after GHG concentrations have stabilized causing an eventual sea level rise much larger than projected for the 21st century. If warming in excess of 1.9 to 4.6°C above pre-industrial level be sustained over many centuries then the final rise in sea level due to melting polar ice could be several meters, because it will be in addition to that of rise of sea level due to thermal expansion (IPCC, 2007).

d. Devastating effects on the native habitats of many animals and plants due to global warming is likely to drive a considerable number of today's known animal and plant species to extinction. According to International World Wildlife Fund (WWF) and National Wildlife Federation in the United States species from the tropics to the poles are at risk. Many species may be unable to move to new areas quickly enough to survive changes that rising temperatures will bring to their historic habitats. One-fifth of the world's natural areas may be facing a "catastrophic" loss of species. Another survey in 2004 of 5,743 amphibian species indicated that one in every three species was in danger of extinction due to global warming (Bruce E. Johansen). Studies predict that global warming will also lead to extinction of insects in the tropical zone by the end of the century while insects in the temperate zones and the poles could experience a dramatic increase in numbers. It will also have catastrophic impact on the marine ecosystems. They will be affected not only by an increase in sea temperature and changes in ocean circulation, but also by ocean acidification, as the concentration of dissolved carbon dioxide (carbonic acid) rises. This is expected to negatively affect shell forming organisms, corals and their dependent ecosystems. Accelerated warming of the atmosphere will also alter the flora and fauna around the world.

e. Each year, about 800,000 people die from causes attributable to air pollution, 1.8 million from diarrhoea resulting from lack of access to clean water supply, sanitation, and poor hygiene, 3.5 million from malnutrition and approximately 60,000 in natural disasters. Climate change has a direct impact on human health. For example, the warmer the climate the likelihood of its impact on human health becomes worse. Available studies suggest that there will be an increase in health problems. It is anticipated that there will be an increase in the number of deaths due to greater frequency and severity of heat waves and other extreme weather events. The World Health Organization (WHO) in their studies have indicated that due to rising temperatures, malaria cases are now being reported for the first time from countries like Nepal and Bhutan. It has also been predicted that an additional 220-400 million people could be exposed to malaria- a disease that claims around 1 million lives annually. Dengue fever is already in evidence at higher levels of elevation in Latin America and parts of East.

INDIA'S CONCERN ABOUT CLIMATE CHANGE

The overriding immediate concern for India is the fast pace at which negotiations are taking place on the climate front. India's main energy resource is coal. With the threat of climate change, India is called upon to change its energy strategy based on coal, its most abundant resource, and to use other energy sources (e.g. oil, gas, renewables and nuclear energy) instead, which may turn out to be expensive. Thus, an immediate issue is to come up with a better negotiation strategy such that India have more freedom to decide which type of energy to use, how to generate power, how to reduce methane emissions by agricultural practices or forestry and so on.

Low Agriculture Productivity: Agriculture will be adversely affected not only by an increase or decrease in the overall amounts of rainfall but also by shifts in the timing of the rainfall. Any change in rainfall patterns poses a serious threat to agriculture, and therefore to the economy and food security. Summer rainfall accounts for almost 70 per cent of the total annual rainfall over India and is crucial to Indian agriculture. However, studies predict decline in summer rainfall by the 2050s. Semi arid regions of western India are expected to receive higher than normal rainfall as temperatures soar, while central India will experience a decrease of between 10 and 20 per cent in winter rainfall by the 2050s. Relatively small climate changes can cause large water resources problems particularly in arid and semi arid regions. Semi arid regions of western India are expected to receive higher than normal rainfall as temperatures soar, while central India will experience a decrease of between 10 and 20 per cent in winter rainfall by the 2050s. Productivity of most crops may decrease due to increase in temperature and decrease in water availability, especially in Indo-Gangetic plains. This apart, there would be a decline in the productivity of rabi as compared to kharif season crops. Rising temperature would increase fertilizer requirement for the same production targets and result in higher GHG emissions, ammonia volatilization and cost of crop production (M.S. Swaminathan, 2008). Increased frequencies of droughts, floods, storms and cyclones are likely to increase agricultural production variability. Therefore, India has to place equal emphasis on saving lives and sustaining livelihoods.

Sea Level Rise: Large-scale emigration from coastal zones is expected due to submergence of coast-lines after sea levels have risen. This will create large numbers of environmental refugees especially from low-lying delta regions in poor countries. Furthermore, intrusion of sea-water in the ground water and changes in temperature can reduce agricultural and fishing incomes. Countries dependent on coastal fishery and agriculture, which most often include developing countries, are likely to be adversely affected. If a one-meter sea level rise were to take place today, it would displace 7 million persons in India (ADB, 1995). In the future many more may be displaced. 35% of the land in Bangladesh would be submerged by a one-meter rise. The coastal states of Maharashtra, Goa and Gujarat face a grave risk from the sea level rise, which could flood land (including agricultural land) and cause damage to coastal infrastructure and other property. Goa will be the worst hit, losing a large percentage of its total land area, including many of its famous beaches and tourist infrastructure. Mumbai's northern suburbs like Versova beach and other populated areas along tidal mud flats and creeks are also vulnerable to land loss and increased flooding due to sea level rise. Flooding will displace a large number of people from the coasts putting a greater pressure on the civic amenities and rapid urbanisation. Sea water percolation due to inundations can diminish freshwater supplies making water scarcer. The states along the coasts like Orissa will experience worse cyclones. Many species living along the coastline are also threatened.

Water Scarcity: Water resources will come under increasing pressure in the Indian subcontinent due to the changing climate. The Himalayan glaciers are sources of fresh water for perennial rivers, in particular the Indus, Ganga, and Brahmaputra river systems. In recent decades, the Himalayan region seems to have undergone substantial changes as a result of extensive land use (e.g. deforestation, agricultural practices and urbanization), leading to frequent hydrological disasters, enhanced sedimentation and pollution of lakes. There is evidence that some Himalayan glaciers have retreated significantly since the 19th century (Pradipto Ghosh, 2008).Available records suggest that the Gangotri glacier is retreating about 28 m per year. Any further warming is likely to increase the melting of glaciers more rapidly than the accumulation. Glacial melt is expected to increase under changed climate conditions, which would lead to increased summer flows in some river systems for a few decades, followed by a reduction in flow as the glaciers disappear. As a result of increase in temperature significant changes in rainfall pattern have been observed during the 20th century in India. A serious environmental problem has also been witnessed in the Indo-Gangetic Plain Region (IGPR) in the past whereby different rivers (including Kosi, Ganga, Ghaghara, Son, Indus and its tributaries and Yamuna) changed their course a number of times. The recent devastating floods in Nepal and Bihar due to change of course of River Kosi is a case in point.

ADDRESSING CLIMATE CHANGE

Sathaye, Shukla and Ravindranath (2006), advocate the ways to pursue sustainable development strategies that contribute to mitigation of climate change:

Adoption of cost-effective energy-efficient technologies in electricity generation, transmission distribution, and end-use can reduce costs and local pollution in addition to reduction of greenhouse gas emissions.

Shift to renewables, some of which are already cost effective, can enhance sustainable energy supply; can reduce local pollution and greenhouse gas emissions.

Adoption of forest conservation, reforestation, afforestation and sustainable forest management practices can contribute to conservation of biodiversity, watershed protection, rural employment generation, increased incomes to forest dwellers and carbon sink enhancement.

Efficient, fast and reliable public transport systems such as metro-railways can reduce urban congestion, local pollution and greenhouse gas emissions.

Adoption of participatory approach to forest management, rural energy, irrigation water management and rural development in general can promote sustained development activities and ensure long-term greenhouse gas emission reduction or carbon sink enhancement.

Rational energy pricing based on long-run-marginal cost principle can level the playing field for renewables, increase the spread of energy-efficient and renewable energy technologies, and the economic viability of utility companies, ultimately leading to greenhouse gas emission reduction.

GLOBAL OULOOK - THE CANCUN SUMMIT

The Cancún Climate Change Summit, COP 16, took place in Cancún, Mexico from 29 November to 10 December 2010. The negotiators faced many challenges picking up from the widely-criticized Copenhagen summit.

Copenhagen, COP 15 (7 December to 18 December 2009), was under considerable pressure from the international community to deliver a legally binding document to cut greenhouse gas emissions. The end result, however, was the non-binding Copenhagen Accord, a two-page agreement which states that future temperature rises should be limited to 2°C, but included no emission targets. This deal was far from any global agreement on replacing the Kyoto Protocol (due to expire in 2012) and was largely seen as a failure of global cooperation.

Before the Cancún talks even began, any high expectations fell after several key people, including UN Secretary Ban Ki-Moon and UNFCCC Executive Secretary Christiana Figueres, expressed little hope for reaching any new binding deal at Cancún, and urged to reach a modest agreement instead.

The major challenge facing Cancún was to transform the Copenhagen Accord into a working plan of action. Many hoped that Cancún would be seen as a turning point in climate change negotiations.

The official talks ended on December 10 and marked a turning point in the global negotiations to agree a global deal to tackle dangerous climate change.

Key outcomes from the agreements at the Summit are:

- **Objective**: agreed to peak emissions and an overall 2 degree target to limit temperature rise.
- **Emissions**: bringing details of what developed and developing countries are doing to tackle climate change, promised in Copenhagen, into the UN system so they can be assessed.
- **MRV**: agreed a system so we know how countries are living up to their promises to take action on emissions
- **Long-term finance**: established the Green Climate Fund and will start to get it ready to help developing countries go low carbon and adapt to climate impacts.
- **Deforestation**: agreed to slow, halt and reverse destruction of trees and agree the rules for delivering it and for monitoring progress.
- **Technology/Adaptation**: set up the mechanisms to help developing countries access low carbon technology, and adapt to climate change

TIPS TO SAVE OUR CLIMATE: THE GANDHIAN VIEW

Gandhian philosophy is the need of the day. Mahatma Gandhi, an ardent champion of sustainable development, sternly opposed the colonial modernity which went beyond the carrying capacity of the planet earth and exploited people and resources across the planet. He said long ago in 1924, "Earth provides enough to satisfy every man's need, but not any man's greed". Today, the mankind should remodel their life styles if they are concerned about the mother earth and the future generations and lead the life of plain living and high thinking as advocated by Gandhiji. Following are certain tips which should be adopted to help save our climate:

- Walk or use bike instead of driving a car whenever one can manage. Cars and trucks run on fossil fuels which release carbon dioxide into the atmosphere. For every mile traveled, one pound of carbon can be saved.
- Teleconference and videoconference should be promoted for professional meetings. This saves time, money and carbon emissions.
- Use compact fluorescent light bulbs instead of incandescent bulb, which will save 100 pounds of carbon over the life of the bulb.

- Use recycled products, as products made from recycled paper, glass, metal and plastic reduce carbon emissions because they use less energy to manufacture than products made from completely new materials.
- Check your automobile monthly to ensure tires are inflated.
- Do not cut trees and plant new ones.

CONCLUSION

Climate change is the crucial issue of our times. It is perhaps, the greatest challenge to sustainable development. It should be addressed by all countries with a shared perspective, free from narrow and myopic considerations. The developed countries need to look beyond their narrow self interests and work jointly with the developing countries to evolve cooperative and collaborative strategies on the issue of climate change, which is of immense relevance for the future of mankind.

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ADHERENCE OF CUSTOMER NEEDS THROUGH THE REDRESSAL MECHANISM OF BANKS

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ABSTRACT

The Reserve Bank initiated several measures during 2006-07 to protect customers' rights, enhance the quality of customer service and strengthen the grievance redressal mechanism in the Reserve Bank as well as in banks. The Banking Ombudsman which has been initiated during the year 2006 can receive and consider any complaint relating to the various deficiencies in banking services including internet banking. The forum of redressal of consumers' grievances about banking, the Banking Ombudsman (BO), received 79,266 complaints at its 15 offices in 2009-10, contributed largely by the complaints received at the offices of the three major metropolises of Mumbai, New Delhi and Chennai. This paper is an attempt to evaluate the nature and progress of complaints received and disposed related to the banking services. Among the complaints received, the complaints regarding Credit cards, debit cards and ATM cards ranks first. Hence, it is strongly recommended that the Scheduled Commercial banks should improve the customer services in general and with ATMs in particular in order to avoid the complaints from the customers.

KEYWORDS
Banking Ombudsman Scheme, Customers, Complaints, disposal.

INTRODUCTION
The Reserve Bank initiated several measures during 2006-07 to protect customers' rights, enhance the quality of customer service and strengthen the grievance redressal mechanism in the Reserve Bank as well as in banks. A new department for customer service, 'Customer Service Department', was constituted in the Reserve Bank which became operational on July 1, 2006 mainly to (i) oversee the customer service aspects relating to grievance redressal by banks; (ii) administer the Banking Ombudsman (BO) Scheme; and (iii) liaise with the Banking Codes and Standards Board of India (BCSBI). The department also oversees the level of customer service in the Reserve Bank offices. The data regarding the complaints received at the Reserve Bank offices are collated and analyzed at Central Office level on a monthly basis and reviewed by the Local Board on a quarterly basis.

During 2008-09, focused attention is given to the customer service dimension of the banking sector by sensitizing banks to render good and efficient customer service, and encourage involvement of Boards of banks in evolving policies keeping in view the needs and aspirations of customers. The Reserve Bank has set up a full-fledged Customer Service Department with a view to making the banks more customer-friendly. The Reserve Bank has taken a number of steps to disseminate instructions/guidelines relating to customer service and grievance redressal by banks through the multi-lingual website by placing all customer related notifications and press releases in a specific page titled *'For Common Person'*. Customers of commercial banks can also approach the Reserve Bank with their grievances and queries through *'Contact Us'* mode of the website. A complaint form for lodging complaints with the Banking Ombudsman has also been made functional. The Banks may also display this information on their web-sites. A comprehensive Master Circular on Customer Service was issued on July 1, 2009 incorporating various issues such as customer service, operations of deposit accounts, levy of service charges, service at counters, disclosure of information, operation of accounts by old and incapacitated persons, facilities to visually impaired persons, guardianship in deposit accounts, remittances, drop box facility, collection of instruments, dishonor of cheques, dealing accounts, remittances, drop box facility, collection of instruments, dishonour of cheques, dealing with complaints, erroneous debits due to wrong/ fraudulent transactions, safe deposit lockers, nomination facility, settlement of claims of deceased depositor/missing person, unclaimed deposits and in operative accounts, customer confidentiality obligations, transfer of internal account in branch, switching of bank, co- ordination of officers of CBDT, implementation of recommendation of Working Groups/Committees, and BCSBI's code of commitment to customers and instructions issued thereon.

NEED FOR THE STUDY
The scope of BOS was widened to include deficiencies arising out of internet banking. Under the amended Scheme, a customer would also be able to lodge a complaint against the bank for its non-adherence to the provisions of the fair practices code for lenders or the Code of Bank's Commitment to Customers issued by the Banking Codes and Standards Board of India (BCSBI). Further, non-observance of the Reserve Bank's guidelines on engagement of recovery agents by banks has also been brought specifically under the purview of the Scheme. The amended Scheme, however, does not include certain banking transactions, such as failure to honor bank guarantee or letter of credit. Complaints on these areas of banking services are insignificant in number. Any customer who has a grievance against a bank can complain to the Banking Ombudsman in whose jurisdiction the branch of the bank complained against is located. Some banks have centralized certain transactions, like housing loans and credit cards. Hence, the researcher took interest in attempting a study on the redressal mechanism of banks and the extent of the same in reaching the needy people.

STATEMENT OF THE PROBLEM
The forum of redressal of consumers' grievances about banking, the Banking Ombudsman (BO), received 79,266 complaints at its 15 offices in 2009-10 contributed largely by the complaints received at the offices of the three major metropolises of Mumbai, New Delhi and Chennai. These three offices together accounted for almost half of the total complaints (34,830 complaints accounting for 43.9 per cent of the total) in 2009-10. It may be highlighted that the number of complaints at almost all offices in India has been increasing in the recent years indicating the growing awareness among consumers about grievance redressal, but the increase was particularly rapid at the offices in these three metropolises. The share of complaints received against foreign banks and new private sector banks, which had been on a rapid increase in the recent years, showed signs of slowing down in 2009-10. In the case of foreign banks, there was a decline in the number of complaints received by the BOs in 2009-10. In contrast, there was a perceptible increase to the tune of over 26 per cent in the number of complaints received against public sector banks in 2009-10. On account of a fall in the growth of complaints against new private sector banks and foreign banks, the shares of these bank groups posted a decline between 2008-09 and 2009-10, while the share of public sector banks, particularly the SBI group showed a rise. In 2009-10, SBI group alone accounted for little less than one-third of the total number of complaints received by SCBs. The number of complaints per branch for public sector banks at 0.71 was much lower than the corresponding figures of 2.3 and 37.8 for private sector and foreign banks, respectively, in 2009-10. Though the largest number of complaints received by BOs continued to be with respect to credit/debit/ATM cards, there was a decline in the share of such complaints in 2009-10. Similarly, complaints about the core banking business of banks, particularly deposits and loans, also showed a fall during the year. The decline in the share of card-related complaints in 2009-10 needs to be juxtaposed with the decline in the share of complaints against foreign banks and new private sector banks, as card-related complaints formed an important reason for complaints against these two bank groups in the past. As the number of complaints received through the BOs is on the rising trend, the investigator thought of exploring the quantity, nature and mode of complaints received along with the agency of lodging complaints and the disposal thereof exclusively with regards to the problems related to banking sector.

OBJECTIVES OF THE STUDY

- To evaluate the role of banking sector in extending their customer services towards the redressal mechanisms.
- To highlight the quantity and nature of complaints received through the redressal mechanisms.

METHODOLOGY

The present study based on the secondary data available from the various issues of the Trend and Progress of Banking, Reserve Bank of India Bulletin and from the Annual Reports of the Consumer Protection and National Disputes Redressal Commission. The collected data were tabulated and have been analysed with the help of trend analysis, correlation analysis and percentage analysis. Further necessary charts were imparted to highlight the important figures and to make easy understanding.

SCOPE OF THE STUDY

Though the functions of the banks are many, the researcher has undertaken only the study on the redressal mechanism of the banks which covers the grounds for complaints, the functioning of Banking Ombudsman Scheme, Complaints received at Banking Ombudsman Scheme at area wise, bank wise and by the nature of complaints which naturally gives an awareness to the beneficiaries to lodge complaints and an eye opener to the banking officials with regards to their defects.

GROUNDS OF COMPLAINTS

The Banking Ombudsman can receive and consider any complaint relating to the following deficiency in banking services (including internet banking):

- Non-payment or delay in the payment or collection of cheques, drafts, bills etc.
- non-acceptance, without sufficient cause, of small denomination notes tendered for any purpose, and for charging of commission in respect thereof
- non-acceptance, without sufficient cause, of coins tendered and for charging of commission in respect thereof
- non-payment or delay in payment of inward remittances
- failure to issue or delay in issue of drafts, pay orders or bankers' cheques
- non-adherence to prescribed working hours
- failure to provide or delay in providing a banking facility (other than loans and advances) promised in writing by a bank or its direct selling agents
- delays, non-credit of proceeds to parties accounts, non-payment of deposit or non-observance of the Reserve Bank directives, if any, applicable to rate of interest on deposits in any savings, current or other account maintained with a bank
- complaints from Non-Resident Indians having accounts in India in relation to their remittances from abroad, deposits and other bank-related matters
- refusal to open deposit accounts without any valid reason for refusal
- levying of charges without adequate prior notice to the customer
- non-adherence by the bank or its subsidiaries to the instructions of Reserve Bank on ATM/Debit card operations or credit card operations
- non-disbursement or delay in disbursement of pension (to the extent the grievance can be attributed to the action on the part of the bank concerned, but not with regard to its employees)
- refusal to accept or delay in accepting payment towards taxes, as required by Reserve Bank/Government
- refusal to issue or delay in issuing, or failure to service or delay in servicing or redemption of Government securities
- forced closure of deposit accounts without due notice or without sufficient reason
- refusal to close or delay in closing the accounts
- non-adherence to the fair practices code as adopted by the bank or non-adherence to the provisions of the Code of Bank s Commitments to Customers issued by Banking Codes and Standards Board of India and as adopted by the bank
- non-observance of Reserve Bank guidelines on engagement of recovery agents by banks and
- Any other matter relating to the violation of the directives issued by the Reserve Bank in relation to banking or other services.

A customer can also lodge a complaint on the following grounds of deficiency in service with respect to loans and advances

- non-observance of Reserve Bank Directives on interest rates;
- delays in sanction, disbursement or non-observance of prescribed time schedule for disposal of loan applications;
- non-acceptance of application for loans without furnishing valid reasons to the applicant;
- non-adherence to the provisions of the fair practices code for lenders as adopted by the bank or Code of Bank's Commitment to Customers, as the case may be;
- Non-observance of any other direction or instruction of the Reserve Bank as may be specified by the Reserve Bank for this purpose from time to time.
- The Banking Ombudsman may also deal with such other matter as may be specified by the Reserve Bank from time to time.

REGION WISE COMPLAINTS RECEIVED

Offices of the Banking Ombudsman receive and consider complaints from customers relating to the deficiencies in banking services in respect to their territorial jurisdiction. During 2008-09, higher number of complaints were received by the BO Offices in New Delhi(15%), Chennai (15%), Mumbai (14%)and Kanpur (11%) followed by Hyderabad(6%) and Ahmedabad (6%). Percentage wise, Chennai office witnessed the highest increase in the number of complaints (128%). The 15 Offices of the Banking Ombudsman receive and consider complaints from customers relating to the deficiencies in banking services in respect to their territorial jurisdiction.

TABLE 1: REGION WISE COMPLAINTS RECEIVED AT BANKING OMBUDSMAN SCHEME

Offices	Number of Complaints Received									
	2006-07	%	2007-08	%	2008-09	%	2009-10	%	Ave	%
Ahmadabad	2107	5.45	2855	5.96	3732	5.40	4149	5.23	3211	5.47
Bangalore	2406	6.23	2975	6.21	3255	4.71	3854	4.86	3123	5.32
Bhopal	2731	7.07	3402	7.10	3375	4.88	3873	4.89	3345	5.70
Bhubaneswar	689	1.78	998	2.08	1159	1.68	1219	1.54	1016	1.73
Chandigarh	2006	5.19	2331	4.87	2634	3.81	3234	4.08	2551	4.34
Chennai	2387	6.18	4545	9.49	10381	**15.02**	12727	**16.06**	7510	**12.79**
Guwahati	170	0.44	282	0.59	455	0.66	528	0.67	359	0.61
Hyderabad	2767	7.16	2843	5.94	3961	5.73	5622	7.09	3798	6.47
Jaipur	2976	7.70	3369	7.04	3688	5.34	4560	5.75	3648	6.21
Kanpur	4321	11.18	5340	11.15	7776	11.25	7832	9.88	6317	10.76
Kolkata	2011	5.20	2815	5.88	3671	5.31	5326	6.72	3456	5.88
Mumbai	5525	**14.30**	6070	12.68	9631	13.93	10058	12.69	7821	**13.32**
New Delhi	5481	**14.19**	6742	**14.08**	10473	**15.15**	12045	**15.20**	8685	**14.79**
Patna	1481	3.83	1480	3.09	2110	3.05	1707	2.15	1695	2.89
Thiruvananthapuram	1580	4.09	1840	3.84	2816	4.07	2532	3.19	2192	3.73
Total	38638	100	47887	100	69117	100	79266	100	58727	100

Source: Trend and Progress of Banking, Reserve Bank of India Bulletin, various issues

The complaints received from 2006-07 to 2009-10 have been collected and analyzed with the help of percentage analysis and trend analysis. It is noted from the percentage analysis that the complaints received were high from Mumbai (14.30%) and New Delhi (14.19%) during 2006-07, New Delhi (14.08%) during 2007-08, New Delhi (15.15%) and Chennai (15.02%) during 2008-09, and Chennai (16.06%) and New Delhi (15.20%) during 2009-10. However, on an average, New Delhi tops in ranking with 14.79 percent, which is followed by Mumbai with 13.32 percent and Chennai with 12.79 percent. The offices situated in Guwahati (0.61%), and Bhubaneswar (1.73%) received lesser number of complaints. The position is further explained in the following chart.

NUMBER OF COMPLAINTS

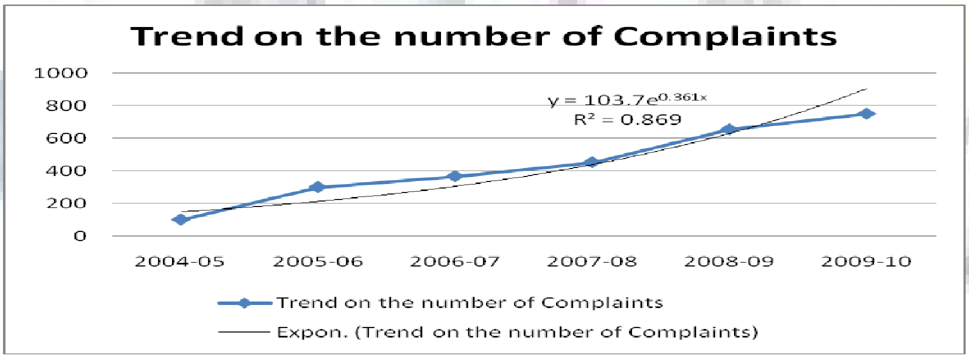
The number of complaints received has recorded substantial increase since 2006 as new grounds of complaints such as credit card issues, failure in providing the promised facilities, non-adherence to fair practices code and levying of excessive charges without prior notice, etc were included in the Scheme. Further, internet banking related complaints were added as a new ground for complaint as per amendment of the Scheme dated February 3, 2009. Increased awareness among the public about the BOS and online accessibility to BO office through internet also contributed to the increase in receipt of complaints. The Banking Ombudsman Offices receive complaints pertaining to deficiency in service provided by banks. The number of complaints received has increased substantially over the years and this trend is maintained during the year 2009-10 also by recording an increase of 15% over the previous year. There are 15 Banking Ombudsman branch are offices functioning all over India. Average number of complaints received per BO office is also on the increase due to enlargement of the scope of the Scheme coupled with the awareness programmes undertaken by the BO offices on a regular basis. On an average, each BO office handled 5284 complaints during the current year as compared to just 2115 complaints during the year 2005-06, indicating the popularity of the Scheme.

TABLE 2: TREND ON THE COMPLAINTS RECEIVED AT BANKING OMBUDSMAN SCHEME

Year	Number of Complaints	Incremental change	% of change	Trend on the number of Complaints	Average number of Complaints
2004-05	10560	0	0	100	704
2005-06	31732	21172	200	300	2115
2006-07	38638	6906	22	366	2576
2007-08	47887	9249	24	453	3192
2008-09	69117	21230	44	655	4608
2009-10	79266	10149	15	751	5284
Average	**46200**			**438**	
Correlation	**0.99**				

Source: Trend and Progress of Banking, Reserve Bank of India Bulletin, various issues

CHART - A



The incremental change of complaints received over the years under study from 2004-05 to 2009-10 shows that the change is vital during the year 2008-09 to the extent of 44 percent and is lighter during the year 2009-10 to the tune of 15 percent. The trend percentage calculated in this regard is high in the year 2009-10, the growth percentage of the same is 651 percent. The trend line is positive with an exponential growth rate of 36.1 percent and 0.87 as the coefficient of determination. Hence, it is known that the complaints received are growing steadily with an average growth rate of 338 percent with 0.99 as high degree of correlation.

NATURE OF COMPLAINTS

Complaints relating to credit cards comprising 24 % of the total complaints in 2009-10 as compared to 25.5% previous year show a declining trend this year. These complaints include complaints related to debit cards and ATM cards also. The types of card-related complaints consists of items like issuance of unsolicited credit cards and unsolicited insurance policies and recovery of premium charges, charging of annual fee in spite of being offered as 'free' card and issuance of loans over phone, disputes over wrong billing, settlement offers conveyed telephonically, non-settlement of insurance claims after the demise of the card holder, abusive calls, excessive charges, wrong debits to account, non dispensation of money from ATM, etc . A general source of these complaints continues to be the difficulty in accessing the credit card issuers and the poor response from the call centers. Simply put, this is the issue of non-transparency and mis-selling. Complaints under the head 'Others' have constituted 24 % of the total complaints as against 12.4% during the previous year. These include mainly non-adherence to prescribed working hours, refusal to accept or delay in accepting payments towards taxes as required by RBI/ Government of India, refusal to accept/delay in issuing or failure to service or delay in servicing or redemption of Government securities, refusal to close or delay in closing of accounts, etc. These complaints are of very primary in nature and need not had to be escalated to the offices of BOs and should have been redressed at individual banks' level.

TABLE 3: NATURE OF COMPLAINTS RECEIVED BY BANKING OMBUDSMAN SCHEME

Nature of Complaint	Public Sector Banks	Private Sector Banks	Foreign Banks	Scheduled Commercial banks	UCBs/RRBs/ others	Total	%
Deposit accounts	1946	1165	454	3565	116	7246	4.67
Remittances	3358	1873	268	5499	209	11207	7.22
Credit/debit/ATM cards	9550	4725	4258	18533	277	37343	**24.06**
Loans/advances	4109	1652	395	6156	456	12768	8.23
Charges without prior notice	1939	2009	729	4677	87	9441	6.08
Pension	4577	67	65	4709	122	9540	6.15
Failure on Commitments made	6407	3369	1134	10910	659	22479	14.48
Direct selling agents	657	669	228	1554	55	3163	2.04
Notes and Coins	92	41	20	153	5	311	0.20
Others	7838	6582	3808	18228	612	37068	**23.89**
Out of subject	1451	401	91	1943	741	4627	2.98
Total Complaints	41924	22553	11450	75927	3339	155193	100

Source: Trend and Progress of Banking, Reserve Bank of India Bulletin, various issues

The nature of complaints received from the bank customers are many and are classified into eleven categories. Among the various types of complaints lodged with the banking Ombudsman Scheme, the complaints regarding Credit cards, debit cards and ATM cards ranks first with 24.06 percent, and other common unspecified complaints ranks next with 23.89 percent. Complaints on notes and coins are very meager comparatively.

TABLE 4: BANK WISE COMPLAINTS RECEIVED BY BANKING OMBUDSMAN SCHEME

Banks	**Number of Complaints**	**%**
Public Sector Banks	41924	27
Private Sector Banks	22553	15
Foreign Banks	11450	7
Scheduled Commercial banks	75927	**49**
UCBs/RRBs/Others	3339	2
Total	155193	100

Source: Trend and Progress of Banking, Reserve Bank of India Bulletin, various issues

The complaints received through Banking Ombudsman Scheme are many. For the purpose of the study, the entire banks are sub divided into Public Sector Banks, Private Sector Banks, Foreign Banks, Scheduled Commercial banks and Urban Cooperative banks, Regional Rural Banks and Others. Among them, the Scheduled Commercial banks receive more complaints to the extent of 49 percent, which is followed by Public Sector Banks (27%), Private Sector Banks (15%), Foreign Banks (7%) and UCBs/RRBs/Others (2%). Hence, it is recommended that the Scheduled Commercial banks should improve the customer services in order to avoid the complaints from the customers.

REGION WISE RECEIPT OF COMPLAINTS

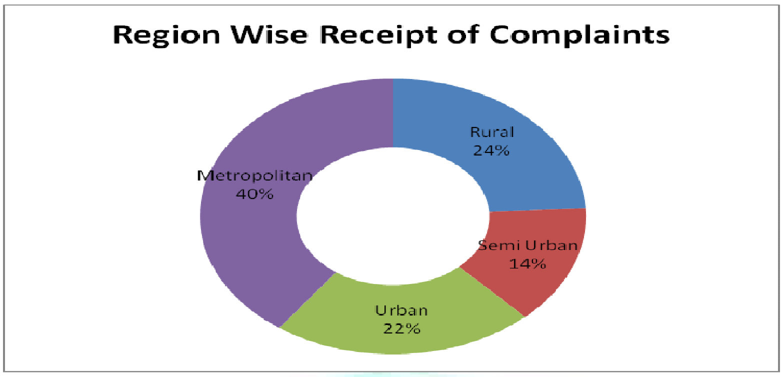
The offices of the Banking Ombudsmen received increasing number of complaints from the public irrespective of the regions. This is a testimony to the success of the awareness efforts undertaken by the Banking Ombudsmen as well as the RBI through personal/village visits, media campaign and the like. The offices of the Banking Ombudsman received maximum number of complaints from rural and metropolitan areas during the year 2009-10. This is a testimony to the success of the awareness efforts undertaken by the Offices of the Banking Ombudsman as well as the RBI Regional Offices through personal/village visits, media campaign etc. During the year, the RBI had celebrated its platinum jubilee and all offices including Central Office Departments had conducted outreach programmes. Further, Top Executives of the Bank had visited very remote and moffusil areas of the country as a part of outreach activity of Platinum Jubilee year celebrations. The detailed region wise position of complaints is given below:

TABLE 5: REGION WISE RECEIPT OF COMPLAINTS

Region	**2007-08**	**%**	**2008-09**	**%**	**2009-10**	**%**	**Average**	**%**	**% increase**
Rural	8418	18	13915	20	25,055	32	15796	24	80
Semi Urban	6641	14	9817	14	10,741	14	9066	14	9
Urban	10978	23	15723	23	16,423	20	14375	22	5
Metropolitan	21850	46	29662	43	27,047	34	26186	40	(-) 9
Total	47,887	100	69,117	100	79,266	100	65,423	100	15

Source: Compiled from the Annual Reports, Banking Ombudsman Scheme

CHART - B



While the number of complaints from rural areas increased by 80 % during the year 2009-10, complaints from the semi-urban areas increased by 9 % only. On the other hand, complaints from the metros had decreased by 9%. These figures can be well compared against the total increase in the number of complaints by 15 %. The complaints from the rural area have increased, Semi Urban constant, Urban decreased and the Metropolitan too decreased. On an average, Metropolitan has the highest position of complaints to the extent of 40 percent, rural by 24 percent, Urban 22 percent and Semi Urban 14 percent.

MODE-WISE RECEIPT OF COMPLAINTS

Complainants can log on to the RBI web site at "www.rbi.org.in" and complain about deficiency in bank's services by using the online complaint form. The email ids of the Banking Ombudsmen are also available in the public domain and complainants can send emails to them. For those who have no access to internet, complaints can be sent by post. Complaints received are acknowledged and tracked till they are closed in the books of the Office of the Banking Ombudsman. The Complaint Tracking Software in place in the Banking Ombudsman Office gives acknowledgement automatically and complaint number is given as soon as it is taken into the book of the Banking Ombudsman. The Complaint Tracking Software is updated from time to time to meet the changing requirements related to complaints. During the year 2007-08, 2008-09 and 2009-10 the complaints received by different modes are as under:

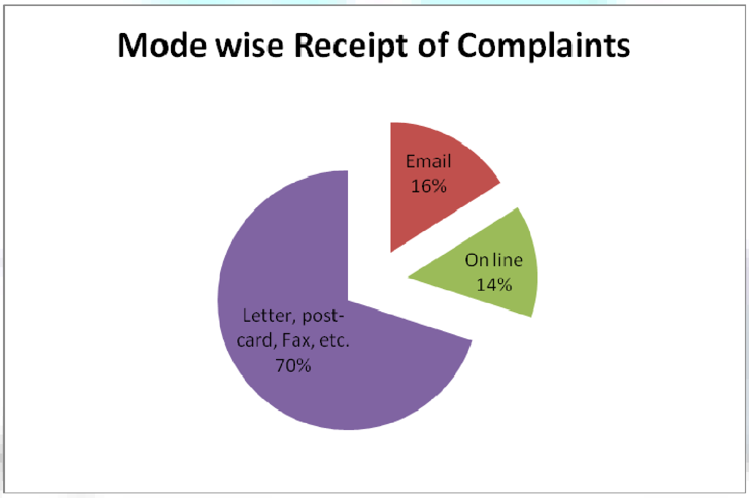
TABLE 6: MODE WISE RECEIPT OF COMPLAINTS AT THE BO OFFICES

Mode	No. of Complaints received during 2007-08		No. of Complaints received during 2008-09		No. of Complaints received during 2009-10		Average	%
	No.	%	No.	%	No.	%		
Email	7183	15	15,927	23	9221	12	10777	16
On line	7662	16	9352	14	11,400	14	9471	14
Letter, post-card, Fax, etc.	33,042	69	43,838	63	58,645	74	45,175	70
Total	47,887	100	69,117	100	79,266	100	65,423	100

Source: Compiled from the Annual Reports, Banking Ombudsman Scheme

Since 46% of the complaints are received from the rural (32%) and semi urban (14%) areas, the receipt of complaints through the postal mode has increased from 63% to 74% during the current year, indicating the less access to internet facilities in the rural/semi urban areas as compared to the urban and metro. Email complaints have decreased from 23 % to 12 % of the total complaints during the year. However, on an average 70 percent of the complaints have been received through Letter, post-card, Fax, etc., 16 percent through Email and 14 percent through On line.

CHART - C



DISPOSAL OF COMPLAINTS

Banking Ombudsman Offices disposed of 94% (83,336) of the 88,699 complaints received during the year 2009-10, as against disposal of 87% of the complaints received during previous year, indicating promptness in disposal of cases at all the BO offices. A brief profile of the complaints disposed of by BO offices during the year is given below:

TABLE 7: DISPOSAL OF COMPLAINTS

Year	Complaints received	Complaints disposed		Complaints carried forward		Trend on Complaints disposed
		No.	%	No.	%	
2004-05	12034	10403	86	1631	14	100
2005-06	33363	27,193	82	6,170	18	261
2006-07	44766	37,661	84	7,105	16	362
2007-08	54992	49,100	89	5,892	11	472
2008-09	75009	65,576	87	9,433	13	630
2009-10	88,699	83,336	94	5,363	6	801
Average	51477	45545	87	5932	13	438
r	0.997					

Source: Compiled from the Annual Reports, Banking Ombudsman Scheme

On an average, out of the total complaints received, 87 percent of the complaints were disposed and only 13 percent have been carried forward to the following year. The trend on the disposal of complaints shows a positive trend with 701 percent growth during the year 2009-10 with the average of 338 percent. The correlation calculated in this respect is highly positive 0.997 which has perfect relationship between complaints received and complaints disposed. Therefore it can be concluded that the redressal mechanism of Banking Ombudsman in India is functioning well with the help of the rules and regulations laid down by the Reserve Bank of India.

FINDINGS

Maximum number of complaints related to credit cards, followed by complaints relating to failure to meet commitments made. A significant number of complaints related to pension payments especially in case of public sector banks and direct selling agents especially for new private sector banks. On an average, New Delhi tops in receiving and lodging complaints from the customers which is followed by Mumbai and Chennai but the offices situated in Guwahati and Bhubaneswar received lesser number of complaints. Whereas the total number of complaints received every year is growing steadily with an average growth rate of 52 percent. Among the various types of complaints lodged with the banking Ombudsman Scheme, the complaints regarding Credit cards, debit cards and ATM cards ranks first with 24.06 percent, and other common unspecified complaints ranks next with 23.89 percent. Complaints on notes and coins are very meager comparatively. The Scheduled Commercial banks receive more complaints to the extent of 49 percent, which is followed by Public Sector Banks (27%), Private Sector Banks (15%), Foreign Banks (7%) and UCBs/RRBs/Others (2%). Metropolitan has the highest position of complaints to the extent of 40 percent, rural by 24 percent, Urban 22 percent and Semi Urban 14 percent, 70 percent of the complaints have been received through Letter, post-card, Fax, etc., 16 percent through Email and 14 percent through On line. Out of the total complaints received, 87 percent of the complaints were disposed and only 13 percent have been carried forward to the following year which speaks volume of the successful functioning of the redressal mechanism of the banks.

CONCLUSION

Making banks more customer-friendly has been high on the agenda of the Reserve Bank. Accordingly, a number of steps have been taken towards enhancing financial literacy and strengthening channels of information dissemination relating to banking services to customers. A full-fledged Customer Service Department was set up in 2006 by the Reserve Bank to enhance the pace and quality of provision of customer services, while providing customers a forum for redressal of their grievances. Banking Ombudsman (BO) offices receive the complaints from general public relating to their grievances against commercial banks, regional rural banks and scheduled primary co-operative banks. Complainants have the facility to send the complaints by email, online or by post. These complaints are tracked by BO offices by means of a complaint tracking software. It is inferred from the analysis that the redressal mechanism is functioning well in adhering to the needs of the customers with speedy disposal of complaints. Hence, on the basis of the analysis it is strongly recommended that the Scheduled Commercial banks should improve the customer services in order to avoid the complaints from the customers. More awareness can also be created among the general public with regards to the grievance cell and its functioning.

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MEASURING ROI: A STUDY OF HURCONOMICS ON EMPLOYEES OF THE STEEL MANUFACTURING INDUSTRY IN KARNATAKA

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ABSTRACT
Employer wants to encash every investment. Indian companies has made huge investment made on HR in the recent past and companies are started adding this HR investment in their balance sheets. The effective performance of an organization lies not only in available resources but it's strategic utilization of resources. It also widely accepted that company's profits and sustainability is mainly depends on the proper utilization of human resource. employee's quality outcomes and their competencies should be regularly improved and enhanced in the path of vision and mission. This allows the company to continue and increase its market. There is need for greater clarity of better aware of required skills and monetary contribution for the job performance and reach the expectations of management. The perception of management is dynamic towards employees from slave to inimitable potential resource and now employees are termed as economic object. Managers started converting employee's outputs in monetary value and comparing it with the total investment made on employees. Hurconomics gives the concrete information about total human resource investment by the company and how much returns expected output from the employee to company in economic terms and their contribution to profits. Hurconomics outcomes provide the ground rules to build an organization excelling in people, processes, products, profits and helps in making investment decisions on employees by used the TVRLS Methodology to calculate the expected economic returns.This article focused on the expected potential output in monetary terms from Process manager and safety manager profiles of Steel manufacturing industry at Karnataka.

KEYWORDS
Employee ROI, Human asset and productivity, Human resource investment, Hurconomics, O-COT, and R-COT.

INTRODUCTION
Nowadays business demands organization performance and output in financial and economic terms to get success and sustainability. Human resource managers scrutinize and compare the investment made on every employee and their returns to the company. Human being is inevitable resource. The recent past witnessed the growing importance of human resource is widely accepted world wide irrespective of size and type of the industry. Firms started developing human skills as they identified the human potential is unmatchable and inimitable by any other resource. These skill development activities require lot of direct and indirect investments in several ways. Seventy five percentage of total investment is made as human capital. Human capital is one component of a company's overall competitiveness. As we know every investment has returns on it, similarly entrepreneurs are also expecting Return on Investment from employees by comparing the invested amount as human capital with returns they get from employee performance and output.

Employees are thought of somewhat mechanistically: inputs to Production that can be rented or managed just like other inputs or assets. In this part, employees have two important characteristics: innate abilities and skills that they can accumulate in school or on the job. To the extent that employees have skills that are innate, the key issue is to sort them into the appropriate firms and jobs. To the extent that they can learn and improve their productivity, the key issue is to invest in them. Recruiting employees, investing in their skills so that they can advance, and managing employee turnover.

HUMAN ECONOMICS: THE ECONOMIC APPROACH?
Economists recognize two elements that drive human behavior. One is pure psychology, or preferences. Understanding such preferences and their formation and evolution is the realm of classical psychology. The second is the environment in which people act to attain their goals. This is the realm of economics. Thus, economics focuses on budgets, prices, constraints, information, and incentives. It also focuses on social interactions, since an employee's colleagues, manager, and customers play important roles in driving behavior.

Economics focuses on the effects of the environment on behavior; it generally starts with only crude assumptions about preferences of individual employees. This is more of a virtue than it might seem. Thus, in economics we may assume that employees attempt to maximize their Pay. By Pay, we mean not only compensation, but also benefits, job amenities, work environment, and other things offered by the firm that they might value. A theory of pay for performance then has relevance for using any motivational tool, not just cash. The key part of the economic approach is to focus on how the environmental variables like information, resources, constraints, decisions, and incentives affect the outcome of the employees. Those are the issues that are analyzed. More often than not, the analysis results in a statement of one or more important tradeoffs between benefits and costs that must be balanced. Two results of this approach are worth noting here. First, the economic tools that we employ are used to analyze a variety of problems. Second, economics focuses on variables that managers have a great deal of control over. The primary factors analyzed are information, decisions, and investments. These are exactly the levers that managers tend to have the most ability to pull to better design their organizations. It is easier to alter the investments to change the psychology of your workforce.

INTRODUCTION OF HURCONOMICS
Before industrial revolution human being was sold and purchased, owners purchase human being to fulfill their needs and comforts. Human being should do anything or even die for his/her owner. After industrial revolution there was a strong need of skilled labour. Employers treated their employees as machine and tried to maximum utilize efforts of employees. But in the recent past entire world identified and accepted human being as a productive resource and its eminent and innate qualities and we seen the origin of HRM.

Human resource management started to maximum utilizes human resource and started large investments in human resource developments to sort the skills appropriately. These investments surprised the management when human capital has captured 1/3 rd of total investments. These figures made the management to scrutinize human resource with total investment and output in monetary terms. Commercialism has overtaken human touch. Everything is now measured in monetary terms. Relationships, loyalty, trust, openness, commitment etc., are increasingly being replaced by profits, professionalism, flexibility, strategy, speed, return on investment etc. There are tow sides of this change. The positive side is we are doing many more things than before, moving with greater speed, learning new things, becoming more innovative and risk taking, networking more, expanding and creating new employment opportunities and bringing out the best in us. On the negative side we are becoming over commercial, subjecting ourselves to more stress, losing human touch and values, caring less for each other and perhaps less at peace with ourselves than before.

For the last ten years as observed change in human resource development to retain the employee values and goals. The primary focus of human resource development is people in the firm – competence, commitment and culture building. If company focused on keeping them happy, talented, motivated and competent the business will achieve its goals. Human resource manager was focused on the human resource development process and not worry much about the outcome.

Now the times have changed and the human resource development has to change. The change is in terms of change in focus. The human resource development has to change his/her focus from "people" to "Business". The last decade has seen the rise of strategic human resource management where people are treated as a strategic resource and human resource managers have become business partners or strategic partners. In the next decade 'people' is going to become synonymous with business. There is no business without people. Human resource professionals are going to become business partners or business makers.

People are tools and instruments. Become is supreme. Money matters a lot. With it you can buy talent, technology, everything! Profit matter, results matter and your contribution matter. Understand how everyone can contribute. Firms are paying to human resource and its contributions. Unless it has seen human resource is a major contributor and it is contributing human resource in future. Unlike the past the time to discover whether you are contributing or not is not too long.

These are some of the new rules of the game. Do you want to remain human resource development in your old garments? Or would you be willing to change? Be like the swamiji who is educating masses and reaching millions. No one will go to listen to him for stress management, leadership, managerial effectiveness and he uses these as opportunities to change the thinking of his clients. Earlier they used to be devotees, now he has accountants, cashier, customers, event managers, sponsors, collaborators etc.

Here we have to re-establish the good parts of the treditions integrate with it and lead the trend and enable it to benefit from the past. It appreciates the new trend of consumerism, commercialization, capitalism, economicsism, growthism, globalization, technological access and superiority etc. and works for rediscovering people management practices in the changing world. It attempts to use the new language which is being kept covert but underlies all decisions and thought. HR manager in his new avatar: Business driven human resource management.

Hurconomics is a way of looking at various people processes and events in economic and financial terms. It deals with the economics of human resource. It attempts to analyze human resource activities, processes, events, systems, decisions etc. in terms of costs and returns. It also provides metrics or measures of human resource in financial and economics. The terms may include costs, benefits, return on investment (ROI) etc. The unit of measurement proposed to be used largely with Cost of Time.

CRITERIA FOR INVESTMENT DECISION

Investment decisions depend on the mood of the market. As per the empirical studies, employee productivity, fundamentals, mission and vision of the company, change in the external environment and expectations from the employees performance. These expectations depend on the human resource analyst ability to foresee and forecast. Price paid to an employee at present depends on the past and present working performance and expected flow of returns in future from employee will influence the employee price.

An investment on human resource and selection of human resource price also depends on the investor's perception, whether the present price of the employee is fair enough, over or under valued. If the price is fair firm will enjoy the cost benefit and wants to continue as earlier. If price is overvalued then firm may or should enhance the roles and responsibilities to take additional benefits from the employee to get cost benefit. And if it is undervalued firm enjoys the more cost benefits. Thus the concept of overvaluation and undervaluation are relative to skills, task completion time and employee himself. What may be overvalued today a little while ago has become undervalued based on mood of the market scenario, value and valuation of employees, inflation in performance and productivity of the employees and fundamentals of the company and its HR strategic development.

Risk and Investment: Employee investment is risky and there are different types of investments namely, salary, bonus, incentives, fringe benefits and all direct and indirect expenses etc. These risks relating to employees cannot be reduced but can be approximately managed the firm can bear. High paid employees are more risky and incurring losses compare to low paid employees.

HUMAN RESOURCE AS INVESTMENT PERSPECTIVE

Investment perspective guides the Managerial Strategic decisions regarding Human resource. Human resource management practitioners and management scholars have long advocated that human resource should be viewed from investment perspective. Employees as variable cost of Production. Maintainable advantage usually derives from outstanding depth in selected human skills, logistics capabilities, knowledge bases, or other service strengths that competitors cannot reproduce. Thus with their perspective, there is a need to invest heavily in their human resources. These investment requirements are like: Organizations in many industries should be competitive, must have highly skilled labour, knowledgeable workers and organizational learning that leads to fast response and high-quality products and services.

These investments will become more important due to forecasts of shifts in skill needs from manual to cerebral. Contemporary management practices indicate that many leading companies have to recognize the strategic importance of human resource and have adopted an investment perspective toward these resources. Further there is greater awareness of the costs of treating employees as variable costs, which is beginning to change views of human resource practices.

The process of linking strategic and operational investments has both an intentional and emergent character. Intentions are implemented and transform over time. The cumulative effect of separate acts of implementation may be immensely powerful. This may even supply a new context for future strategic choices. Strategies often amount to the after the event labeling of such unpredictable sequences of successful operational acts.

Human resource can be considered by employer as asset and liability. Human Resource Management relates to the total set of knowledge, skills and attitudes that firms need to compete. The differing ability of the firm studied to recognize and carry out a human resource management is apparent.

In order to prevail these features a contemporary management action is required to reinforce them. These have to coherence of purpose among the investment and return on investment. Human resource management activity has to produce a knowledge base to its employees which complements the strategic investment conditions. Similarly these must be inter organizational activity implied by the proceedings of managing interrelated and emergent changes required at a premium.

HURCONOMICS

This framework will extensively use real cost of time and Opportunity cost of time. Real cost of time at the enterprise level is the combined addition of all employee's full time and part time, as well as outsourced etc. One does not go to compute this for each individual. Simply add all the people costs, including the fringe benefits, replacement costs, training costs etc., everything that is spent on people. Some of the possible indices are given below:

REVENUE PER HOUR OF EMPLOYEE TIME

This can be obtained b dividing the total revenues generated in the year or total sales by the number of hours of people time. The number of hours of people time should be estimated by multiplying the person years available in the year of all employees.

PROFIT PER HOUR PER EMPLOYEE

This can be obtained by dividing the total profit earned by the company during a year by the total number of person hours available during that year.

R-COT is the invested indicator and O-COT is a return Indicator i.e. when calculating ROI on human capital use R-COT as an Index of Investment and O-COT as an index of return or expected return.

HOW TO CALCULATE COST OF TIME (COT) USING TVRLS METHODOLOGY

STEP 1: Calculate your CTC (All direct costs in terms of Salary + Perks + indirect costs incurred by the company for getting you, your maintenance, socialization, guidance and development+ investments made or likely to be made to enable you to perform your current role or future likely roles well) let this be figure X (sum of X1+X2+X3).

STEP 2: Estimate the number of hours you expected to work or you normally work in a year. (Number of working days is reached after deducting the number of holidays and leaves, you are formally eligible annually) x number of hours per day on an average you are likely to work excluding your travel time to and from work).This may range between 2000 to 2400 hours. Let this figure be T.

STEP 3: Divide the X by T. This will give you the real cost per hour of your time. Let this be Real Cost of Time (R-COT) per hour = X/T.

STEP 4: Opportunity Cost Factor (OCF) for the company: Opportunity is cost is the returns you are expected to give to the company as a result of its investments on time. While these vary from job to job and expectations may hike them up, there is a crude way of calculating the same. Take the annual turnover of the company in financial terms are targeted for the current year (AT). Also find out the annual estimated people costs (APCTC = Salaries + perks + all other people costs including welfare costs etc.) Normally divide the annual turnover by the annual estimated people costs per year. You will get a factor – opportunity Cost Factor or OCF= AT**/**APCTC.

STEP 5: Your Opportunity cost of time (O-COT) is arrives at by multiplying your R-COT by OCF. If your R-COT is 500 per hour and the OCF is 6, Opportunity cost for the company O-COT = Rs. 3000 or if the OCF is 9 then your O-COT is Rs. 4,500 per hour.

The below calculations of Plant Manager, Divisional Manager: Personnel and Administration. of a Steel Manufacturing company at Karnataka.

Note: 1) Process Manager **(Sunday Working Day)**
2) Safety Manager **(Sunday Holiday)**

DAYS & HOURS CALCULATIONS OF PROCESS MANAGER

Total Working days of the year =365
Current Working Days= Total working days-No.of formally allotted Leaves: 343-18=325.
Current working Days per year = 325.
Current AVG Working days/Month= 325/12=27.08 days per month
Current working hours/month= No.of working days per month* No.of working hours per day: 27.08*9= 243.72
Net Working hours per day = No.of Working Hours per day -Lunch+Other Breaks: 9-1=8
Net Working hours per day =8
Net Working hours/month= Total no.of working days per month *Net Working hours per day
Net Working hours/month=27.08*8=216.64
Net Working hours/year=216.64*12=2599.68

DAYS & HOURS CALCULATION FOR SAFETY MANAGER

Total Working days of the year =365
Total Working Days= Total working days-No.of formally allotted Leaves: 343-18=325.
Current working days = Total Working Days – Sundays: 325-34=291
Current Working days per month = 291/12 = 24.25
Current working hours per month = 24.25*9=218.25
Net working hours per day= Total allotted working hours-(Lunch + Other breaks) = 9-1 = 8
Net Working hours per month = Total working hours per month*Net working hours: 24.25*8= 194
Net working hours per year = 194*12= 2328

1) **PROCESS MANAGER**

Cost to Company : 30,000/Month 30,000*12=3,60,000
Total Working days per year = 325
R – COT = X/T
X = 3,60,000 T = 2599.68
3,60,000/2599.68
R – COT = 138.47 per hour
Opportunity Cost Factor (OCF) : AT/APCTC
= 4,00,00,000/60,00,000
Opportunity Cost Factor (OCF)= 6.66
O – COT = R – COT*OCF
= 138.47*6.66
= 922.21

According to TVRLS methodology, the Purchase Manager costs R-COT = 138.47 rupees per hour to company and expected output from plant manager after putting all his/her efforts is O-COT = 922.21 per hour. These expected returns are based on opportunity cost factor (OCF). Thus with an investment of 3,60,000 rupees in the form of salary the company should get 23,97,600 rupees in return as a results of output from purchase manager. It means he should return 6.66 times more than he is paid. If few months already spent from a year, then the company should calculate the how much returns they received till now and plan to get for remaining returns from 23,97,600 (O-COT) per year.

2) SAFETY MANAGER

Cost to Company : 23,000 per Month 23,000*12= 2,76,000
Net working hours per year = 2328
X = 2,76,000 T = 2328
R – COT = X/T: = 2,76,000/2328
R – COT = 118.5567
Opportunity Cost Factor (OCF) : AT/APCTC
= 4,00,00,000/60,00,000
Opportunity Cost Factor (OCF) = 6.66
O – COT = R – COT*OCF: = 118.5567*6.66
O – COT= 789.587

According to TVRLS methodology, the Safety Manager costs R-COT = 118.5567 rupees per hour to company and expected output from plant manager after putting all his/her efforts is O-COT = 789.587 per hour. These expected returns are based on opportunity cost factor (OCF). Thus with an investment of 2,76,000 rupees in the form of salary the company should get 18,38,160 rupees in return as a results of output from safety manager. It means he should return 6.66

times more than he is paid. If few months already spent from a year, then the company should calculate the how much returns they received till now and plan to get for remaining returns from 18,38,160 (O-COT) per year.

POTENTIAL PROPHECY

Future is uncertain and nobody can expect what happens tomorrow. I cannot assure that company will get Opportunity Cost of Time (O-COT) rupees in return. The answer lies in Faith but it helps in deciding whether the investment is appropriate or not? It also sets the benchmark for both company and employee. If the employee unable to give the expected returns this method helps to reach the nearest value.

CONCLUSION

Human resources are invaluable. It is not possible at least not easy to measure the human resource in terms of price. Because an employee who was undervalued at the beginning of his career, today he may become as a process manager and safety Manager of the company and contribute in many ways to bring profits. They have unlimited capacity to contribute expand and they have tremendous capacity to destroy also. Under no circumstances we cannot underestimate them. People in this part of the world are gifted with a lot of resource, their emotions, loyalty, caring nature, achievement drive, hard work, tolerance, ability to sacrifice and many more things. In recent years companies are showing human capital value in their balance sheet.

With the shown calculations of this study employer or investor can identify whether the employee price is fair, overvalued or undervalued. Firm can easily identify who is not cost benefited. Once identifying the undervaluers firm can make a strategy to get fair price and to forecast the investment plans. Any proportionate improvement in the undervaluers' performance causes to reduce in losses or increase profits.

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NOTE

Company doesn't show its willingness to publish the name.

INDIA'S RECENT ECONOMIC PERFORMANCE AND FUTURE OUTLOOK – NEED FOR CAUTIOUS OPTIMISM

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ABSTRACT

The housing bubble in the US caused by unmindful lending without any modicum of financial prudence led to the financial crisis in the US which in a short time snowballed into the global economic crisis because of the integrated nature of the globalised economy. The effect of these was the steep decline in global growth, plummeting global trade, severe liquidity crunch, failure of banks both in the US and many other countries, free fall in global stock markets, rising unemployment and loss of livelihood and increase in poverty and food insecurity. Indian economy which was the second fastest growing economy in the pre-crisis era did experience the impact of the debilitating global crisis. Though the economy is driven to a large extent by domestic consumption, many sectors of the economy experienced a slow down and growth rate in the crisis year fell to 6.7 per cent from 9 per cent in the preceding year. The stimulus package implemented by the government led to the revival of the economy in 2008-09 and the economy is back in the growth path in 2009-10, and expectation are that in 2011-12 it will return to the 9 per cent plus growth rate. Though the Indian economy has staged a quick recovery, there are several challenges in the future growth path. Therefore it becomes imperative to take stock of the performance, progress made and the challenges ahead in order to ensure that adequate measures are taken to overcome the challenges and ensure sustained growth.

KEY WORDS

Global crisis, Stimulus package, Strong domestic consumption, Revival

INTRODUCTION

The housing bubble in the US caused by unmindful lending without any modicum of financial prudence led to the financial crisis in the US which in a short time snowballed into the global economic crisis because of the integrated nature of the globalised economy. Countries across the world have been severely impacted by the crisis because banks of many countries had invested in the US banking system which was on the verge of collapse. Declining consumption trends in the US which is the largest market of the world, greatly affected the export reliant economies. The cumulative effect of all these was the steep decline in global growth, plummeting global trade, severe liquidity crunch, failure of banks both in the US and many other countries, free fall in global stock markets, rising unemployment and loss of livelihood and increase in poverty and food insecurity. Though many experts such as Milton Friedman, Paul Krugman etc., had warned of the housing asset bubble and the risks that it posed to the US economy, the consistent rise in real estate prices backed by unmindful lending without any modicum of financial prudence ensured that nobody really cared or took heed of the warnings.

The crisis, which first manifested in the fall of Lehman Brothers led to failure of many banks both in the US and across the world. Government's in many of the countries came out with stimulus packages to save their banking systems from the verge of collapse and even economies without much financial exposure to the US banking system such as India also had to come out with stimulus packages in order to ensure that their economies do not slip into recession. The crisis effectively debunked the theory of de-coupling touted by certain economic experts and proved that crisis in any major economy would have a telling impact on the global economic affairs.

The emerging markets have weathered the crisis in a much better manner than most of the countries in the developed world. The Indian economy though, impacted by the crisis has been quick to recover and expectations are that in 2011-12 it will return to the 9 per cent plus growth rate which it recorded in the few years immediately preceding the crisis. This paper analyses the impact and response of the Indian economy and also the likely future trends in light of the emerging scenario in the global landscape.

RESEARCH METHODOLOGY

This paper is conceptual in approach and the authors have conducted a literature review before embarking on analyzing the present and future trends. The authors have relied on secondary data and the period considered for the study is 2006-07 to 2010-11.

NEED FOR THE STUDY

Indian economy which was the second fastest growing economy in the pre-crisis era did experience the impact of the debilitating global crisis. Though the economy is driven to a large extent by domestic consumption, many sectors of the economy experienced a slow down and growth rate in the crisis year fell to 6.7 per cent from 9 per cent in the preceding year. The stimulus package implemented by the government led to the revival of the economy in 2008-09 and the economy is back in the growth path in 2009-10. Though the Indian economy has staged a quick recovery, there are several challenges in the future growth path. Therefore it becomes imperative to take stock of the performance, progress made and the challenges ahead in order to ensure that adequate measures are taken to overcome the challenges and ensure sustained growth.

LITERATURE REVIEW

Achal Raghavan (2009) stated that with the economy showing signs of recovery, now is the time for corporate leaders to retain the gains made in operational efficiencies, and focus on emerging growth opportunities in the marketplace. Balaji CD (2009)[1] concluded that, the financial crisis not only signals the need to shift from pure market fundamentalism to a better regulated financial system but also underscores the need for robust regulatory mechanisms on a global basis. Balaji CD (2010)[2] opined that the Indian economic fundamentals are strong and the economy has the capacity to absorb capital and generate good returns. The economic slowdown and tight labour market conditions might lead to defaults in retail loans. Therefore the Indian banks would do well to take measures to expand credit without diluting lending norms. Dinesh Babu (2010) stated that the impact of the crisis rapidly developed and spread into a global shock resulting in a number of European bank failures and declines in various stock indexes, and large reductions in the market value of equities. Errol D' Souza (2009) opined that the massive government borrowing programme has resulted in a hardening of the yield on government securities which adversely affects aggregate output. As financial markets have factored in a lack of commitment to fiscal correction, as conditions improve the intentions of the fiscal stimulus have been impeded. Krishna Reddy Chittedi, Santhosha Banthini (2009) in their paper analysed the recent trends in financial crisis emphasizing on the severity of crisis in various segments of the real economy and suggested the need for co-ordinated fiscal policies to come out of recession.

INDIAN ECONOMY – REVIVAL AFTER THE SLOW DOWN

At the onset of the crisis, a number of economic experts pointed out that since the Indian economy is not export dependent and majority of the Indian banks having very little exposure to the troubled banks in the US, the crisis would not have any significant impact on the Indian economy. This phenomenon was termed as 'decoupling' and India was pointed out to be an instance of an economy which was decoupled and therefore insulated from the problems faced by the global economy. The reality however, proved otherwise. The Indian economy was also affected by the crisis and it was proved that in today's globalised world, financial and economic integration are realities and no economy can be said to be completely decoupled.

As a result of the crisis, India's economic growth slowed down in all sectors and the GDP growth rate fell from a peak of 9.7 per cent in 2006-07 to 6.7 per cent in 2008-09. Even though the economy has quickly recovered and is expected to grow at 8.8 per cent in 2009-10 and nine per cent in 2010-11, it is an undisputed fact that the slowdown impacted the job market and increased the number of people living below the poverty line. The crisis did not spare even the technology sector with the growth rate of IT and ITes exports dropping significantly. The Indian banking sector remained largely insulated because of the cautionary policies followed by RBI and has now become a case study on prudential practices.

INCOME AND GROWTH RATES

India's per capita income at Rs 44,345 in 2009-10 was 10.5 per cent higher than the previous year. Based on 2004-05 prices, which factors inflation, per capita income grew by 5.6 per cent last fiscal. Per capita income (at 2004-05 prices) was Rs 33,588 in FY10 against Rs 31,821 in the previous year.

Corporate earnings are also on the upsurge as indicated by the increase in advance taxes. The consensus estimate among experts is that corporate earnings would grow by 20 per cent. This growth rate is achievable considering that the nominal economic growth would be upwards of 16 per cent (8 per cent GDP growth plus 8 per cent inflation). The cause for cheer is that higher advance tax payments have been made by companies across sector indicating broad based earnings growth.

The GDP growth which was averaging 9 per cent in the three years pre-crisis period declined to 6.7 per cent in the crisis year ((The 6.7 per cent growth was achieved despite a fall in exports and industrial production as a result of better performance in the first half of FY 09) and slightly improved to 7.4 per cent in the next fiscal (2009-10). The growth rate achieved in 2009-10, sustained India's position as the second fastest growing economy in the world next only to China, whose GDP grew by 9.1 per cent. Considering on a quarterly basis, the economy decelerated in the second half of 2008-09 and the weak trend continued in the first half of 2009-10. Recovery started in the second half of 2009-10 and the monetary policy focus of the government shifted from crisis management to control of inflation. The economic environment in the first six months of FY 2009 was markedly different from the scenario in the last six months. The second half was characterised by slow growth and decline in the inflation rate while both the growth rate and inflation were at a high level in the first half. During the current fiscal (2010-11), the growth rate was 8.6 per cent during the first quarter as compared to 6 per cent in the corresponding period last year. Driven by good performance of agriculture and manufacturing, the Indian economy grew by 8.9 per cent in the second quarter of the current fiscal, up from 8.7 per cent. This resulted in overall economic expansion during the first half (April-September) to 8.9 per cent, up from 7.5 per cent a year ago. The size of the economy rose to Rs 62,31,171 crore (Rs 62.3 trillion) in the last fiscal, up 11.8 per cent over Rs 55,74,449 crore (Rs 55.7 trillion) in FY09.

GOVERNMENT'S TAX REVENUES

Tax revenues are an indicator of the buoyancy or otherwise of an economy. Though substantial tax reliefs were granted to the individual and corporate assessees in a bid to increase disposable income thereby reviving demand and spiking up economic growth, tax revenues grew significantly on the back of strong performance of the corporate sector and the economy as a whole. The direct tax collections for the period April to December 15 (2010-11) rose 18% to nearly Rs.3 trillion. During the nine month period corporate tax collections grew by 21.3%, personal income tax rose by 16.2% compared with the corresponding period in the previous year.

Advance tax collections from India's top 100 companies also grew 16.3 per cent in the first three quarters of the current fiscal. The government has set a target of raising Rs.4.3 trillion through direct taxes in 2010-11, 11 per cent more than the previous year collections. Considering the collection trends upto mid December, the actual collections for the year may even exceed targets.

Indirect collections grew by 42.3 per cent to reach Rs.2.07 trillion during April – November 2010 when compared to Rs.1.45 trillion collected during the corresponding period last year. Customs duty collections were 67 per cent higher at Rs.86,844 crore as against Rs.52,011 a year ago. Customs duty, excise and service tax collected during the said period added up to 66.3 per cent of the overall target of Rs.3.13 lakh crore set for the year. While the collection target from customs duty for the entire year is Rs.1.15 trillion, the first eight months collections alone account for 75.5 per cent. Excise collections rose by 34.4 per cent to Rs.81,894 crore from Rs.61,020 crore. Service tax grew by 18.2 per cent to Rs.38,927 crore from Rs.32,297 crore.

EXTERNAL SECTOR AND THE RUPEE

THE INDIAN EXTERNAL SECTOR – ON A REVIVAL MODE: India's foreign which was growing at 20 per cent plus in the preceding three years of the pre-crisis period suffered a setback because of the crisis. Exports which were $163.13 billion in 2007-08 rose to $185.29 in 2008-09 and fell marginally to $178.74 in 2009-10. Imports which increased sharply from $251.65 billion in 2007-08 to $303.69 billion in 2008-09 fell to $288.4 billion in 2009-10. Though the US is our largest trading partner and goods exports from US having quadrupled to $17 billion in the last seven years and service exports trebling to $10 billion, other than software, India's trade with US is lagging behind in all areas and in the manufactured exports space, the gap is much wider. With the growing differences between US and China over the artificial undervaluation of the Chinese yuan, there is good scope for increased trade between the world's largest two democracies.

As a sign of revival of India's foreign trade, during April – September 2010-11 exports increased by 28 per cent to $103.64 billion and imports increased by 29.9 per cent to reach $166.4 billion compared to the corresponding period last year. At this current growth rate, exports are set to cross the target of $200 billion. Since imports have outpaced exports consistently, the trade deficit for the first six months of the current fiscal stood at $62.83 billion. New incentives and sops worth Rs.1,052 crore have been announced in the annual supplement of the Foreign Trade Policy to boost the country's external trade With these incentives, the government is hopeful of $200 billion of exports this fiscal. Duty Entitlement Pass Book Scheme has been extended for six months till June 30, 2011, zero duty EPCG has been extended for one year and more products have been added, number of additional products from leather, engineering, textiles and jute have been added to the 2 per cent interest subvention scheme, additional benefit of 2 per cent bonus for 135 products under Focus Product Scheme, one per cent Status Holder Incentive Scheme (SHIS) for technology up gradation has been extended till 2011-12 and more products have been added, benefits under Market Linked Focus Product Scheme on garment exports to EU extended from October 2010 to March 2011, Barmer for handicrafts, Bhiwandi for textiles and Agra for leather goods have been notified as towns for export excellence, steps have been announced for reducing the transaction costs of exports, leather sector allowed to re-export unsold imported raw hides and skins and semi finished leather from public bonded warehouses without export duty, list of items entitled for duty free import of gems and jewellery sector expanded, scrips issued under Served From India Scheme for service sector can be used for payment of duty on import of vehicles.

RUPEE: The rupee during mid December 2010 was around Rs.45, much better when compared to the low points reached during the peak of the crisis. The decline of the rupee commenced on September 15, 2008, when FII's commenced their selling spree as they moved from emerging markets and began to invest in the US government's paper. The rupee, fell to a two-year low of 46 against the US dollar, and the overall decline since April 2008 was nearly 15 per cent. Overnight call money rates hit 12.5 per cent, the highest in almost two-and-a-half years. In the next few weeks, the stock markets fell to four-digit levels, the rupee started hitting fresh lows on a daily basis and weakened to an all-time low of 52.13 in early March, and the call rate touched a peak of 21 per cent. As FIIs withdrew $6.42 billion (around Rs 33,000 crore) from the Indian stock markets between September 2008 and March 2009, RBI sold $29 billion (Rs 149,706 crore) to check the rupee's free fall and ensured that over Rs 600,000 crore of primary liquidity was pumped into the system. In addition, the government stepped up spending and cut tax rates to spur demand. In the year 2009-10, despite the current account deficit at 3 per cent of GDP, the rupee appreciated against all major currencies due to revival of capital flows which resulted in a surplus of $42.3 billion in the capital account. Data available up to now for 2010-11 indicate that due to the strong capital flows, the rupee has remained strong in the range of Rs.45 to Rs.46. The RBI has been quite active in the market preventing further appreciation of the rupee ostensibly to protect India's export competitiveness. Whether this move is pragmatic or not will come to light only in the next few quarters on the basis of oil prices. If oil prices cross $100, an estimate shared by some experts, the RBI move would prove counterproductive as it will make imports costlier and widen the trade deficit.

FOREIGN INVESTMENT – FDI AND FII

FDI: FDI at $25.88 billion in 2009-10 was 5 per cent lower when compared to $27.33 billion received in the previous year. During January – June 2009, the country received investment worth $13.19 billion. FDI at $25.88 billion in 2009-10 was 5 per cent lower when compared to $27.33 billion received in the previous year. The continued slow down in the Western countries and Europe is the reason for low inflows. The slowdown in FDI is definitely a cause for concern because of the huge investment planned in the infrastructure by the government. An area of hope is M&A's. Pricewaterhouse Coopers has ranked India amongst the top 3 emerging markets for the next 18 months in terms of attractiveness for deals. According to a recent Economic Intelligence Unit (EIU) study, M&A Beyond Borders: Risks and Opportunities, the developing economies of China, India and Southeast Asia are attractive destinations for M&A deals, with 57 percent of the study's global respondents stating that these countries would figure "significantly or very significantly" in their company's M&A strategies, well ahead of North America and Western Europe. Another important development is that in sharp contrast to the earlier trend, in the post recession period, Indian FDI in the US is much higher than the US FDI in India.

FII: Indian stock markets have already received FII investment of $29 billion since July till November 24 2010 with $6.11 billion being invested in October alone. FII's which had withdrawn Rs.33,000 crore between September 2008 and March 2009 from the Indian markets driving down the Sensex to four digit level from the over 20,000 mark reached in January 2008, began to invest in the Indian markets in FY 2009-10. The Satyam scandal and the rising global uncertainties resulted in increased volatility in the Indian markets in 2009-10. Strong fundamentals of the economy, rising GDP, strong corporate performance and declining trends in the developed economy made India an attractive destination for FII inflows in 2010-11.

SECTORAL ANALYSIS – AGRICULTURE, INDUSTRY AND SERVICES

AGRICULTURE SECTOR: The agriculture sector performed better than anticipated despite the deficient monsoon in 2009-10, but the cause of worry is that the average rate of agricultural production at 1.6 per cent in 2009-10 is lagging behind population growth at 1.9 per cent during the said period and unless significant corrective measures are introduced there is not much hope of increase in agricultural productivity. Despite crop losses due to heavy rains during the kharif seasons, the output of food and cash crops are expected to be much higher in 2010-11 as compared to 2009-10. The sector has revived sharply in the first two quarters of the current fiscal from the drought of the previous year. It has grown at 3.8 per cent for the period April – September 2010 when compared to the 1 per cent growth in the corresponding period last year. It is expected to further gain momentum during the third and fourth quarters on the back of good harvests during the kharif and rabi seasons.

INDUSTRIAL SECTOR: The overall growth in the core sector at 4.5 percent during April – September 2010 is higher than the 4 per cent achieved during the corresponding period last year. Among the core sector industries, crude oil grew at 10.2 per cent as compared to a decline of 1.2 per cent, petroleum and refinery products grew at 2.6 per cent as compared to a decline of 3.6 per cent, the growth rate of coal slowed down to 0.4 per cent as compared to 11.6 per cent, electricity grew at 4 per cent as compared to 6.4 per cent, cement grew at 4.7 per cent as compared to 12.3 per cent and finished steel grew at 3.9 per cent while it was 1.7 per cent in the previous year.

The industrial sector is expected to grow at 12 per cent for the year 2010-11. It had grown at 10.5 per cent for the period April – August 2010 as compared to 5.9 per cent for the corresponding period last year. The spurt in bank credit by 98 per cent this year also points out to the increasing confidence in the industrial sector.

SERVICES SECTOR: The average growth of GDP from services dropped to single digit levels in Q3: 2008-09 despite the government's stimulus package. IT and ITes also had to face tough times due to the slowdown in the US and Europe. The exchange rate depreciation in the second half of 2008-09 helped the earnings grow in Rupee terms but, this did not help bring about growth in employment and investment. The services sector recovered in 2009-10, but the pace of revival was slow. For instance software exports from India grew by just 5.5 per cent. In the first two quarters of 2010-11, the services sector has gathered momentum and has grown at over 9 per cent with most of its components improving their performance over the corresponding period in the last year and this trend is likely to be sustained. With regard to the components of the service sector, construction grew at 8.8 per cent during July – September 2010-11 as compared to the corresponding period last year. Trade, hotels, transport and communication grew at 12.1 per cent as compared to 8.2 per cent, Financing, insurance, real estate and business services grew at 8.3 per cent as compared to 11.3 per cent and community, social and personal services grew at 7.3 per cent as compared to 14 per cent.

BANKING

With regard to the banking sector, while bank credit has increased by 98 per cent (April – December 2010) there has not been corresponding increase in deposits. Incremental bank credit and investment have absorbed over 100 per cent of incremental deposits necessitating the augmentation of resources. While deposit growth in the banking system is only 15.8 per cent, credit growth is at 22.7 per cent. Therefore banks have been allowed to take recourse to the Liquidity Adjustment Facility. The RBI has reduced the Statutory Liquidity Ratio (SLR) of scheduled commercial banks from 25 per cent to 24 per cent with effect from December 2010 and would be conducting open market operations for purchase of government securities aggregating Rs.48,000 crores to ensure liquidity in the system. This is a welcome scenario when compared to the period April to August 2009 when bank credit grew 14.09 per cent, the slowest in five years and banks were regularly parking around over Rs 100,000 crore (Rs 1,000 billion) through the reverse repo window, which is used to suck out liquidity. Policymakers were greatly worried about the low credit off-take with companies deferring capital expenditure due to availability of adequate capacity. The situation improved in 2009-10 with credit off take picking up and gathered great momentum from the first quarter of 2010-11. As a sign of abundant caution and to deflate asset bubbles in the realty sector, RBI has increased the provisioning of teaser loans by 1.6 per cent. It has directed the banks to increase the provision relating to teaser loans to 2 per cent from the existing 0.4 per cent.

STOCK MARKETS

The stock markets which recorded historic highs in January 2008 (20251.09 on January 15, 2008) before the onset of the crisis, fell to four digit levels with the FII's withdrawing Rs.33,000 crore between September 2008 and March 2009. The Sensex witnessed high volatility in 2009 -10 and in 2010-11 recovered sharply due to the encouraging corporate performance and also due to the huge FII inflows. Both the Sensex and Nifty crossed 21,000 and 6,300 points in November and there has been a slight decline after the news of successive scams, but market experts point out that this is a temporary blip and the markets would recover shortly. Though the Sensex has performed well in 2010-11, the fact that needs to be remembered is that emerging markets have performed exceedingly well in this period and the Sensex has in fact underperformed several emerging market indices. The largest IPO Coal India was oversubscribed by 15 times, and the high retail participation is an encouraging sign.

FISCAL AND CURRENT ACCOUNT DEFICIT

FISCAL DEFICIT: The fiscal deficit in 2008-09 was at 6 per cent due to the sixth pay commission implementation and the various tax concessions given by the government. In view of the buoyancy in tax collections, the huge Rs.65,000 crore received from auction of spectrum and broadband, and the disinvestment proceeds, fiscal deficit is expected to decline from 6.9 per cent in 2008-09 and the government is in a good position to meet its fiscal deficit target of 5.5 per cent for 2010-11.

CURRENT ACCOUNT DEFICIT: Though the trade deficit was lower, the decline in invisibles resulted in a higher current account deficit of 2.9 per cent in 2009-10. The current account deficit is expected to widen to $50 billion by March 31, 2011 and since foreign inflows are expected to be in the range of $70 billion, there would be a small surplus of $20 billion to be managed. Since capital flows are expected to be 4.1 per cent of GDP, taking into account the current account deficit, capital flows are not a cause for major concern. A worrying feature in this front is the growing oil prices. If oil prices increase further and cross $100 per barrel, the current account deficit is likely to shoot up further. In case oil prices remain stable and there are huge inflows as a result of the bond buying program of $600 billion announced by the US government, the Indian rupee is likely to appreciate thereby impairing Indian export competitiveness.

INFLATION: Inflation remains a cause for serious concern. During 2009-10, the estimated food inflation and non-food inflation were 14.6 per cent and 3.8 per cent respectively. In 2010-11, it was in double digits for several months till July 2010. It declined to 7.48 per cent in November from 8.58 per cent in the previous month. Food inflation, however, rose to 9.46 per cent for the week ended December 4 2010, from 8.69 per cent in the previous week. The recent price increase in vegetables has been blamed on the heavy rains in certain agricultural areas but the fact remains that prices of food items have been on a consistently increasing trend. For instance for the period between December 15, 2007 and December 11, 2007, the prices of spices and condiments have increased by 83.7 per cent, vegetables by 78.9 per cent, eggs, meat and fish by 72.5 per cent, milk by 52.6 per cent, fruits by 48.2 per cent, tea and coffee by 36.2 per cent, pulses by 32.7 per cent and cereals by 30.5 per cent.

CONCLUSION

The Indian economy has regained its position of being the second fastest growing economy in the world in the post recession period. The prudential and pragmatic policies followed by the RBI in the pre-crisis era and its calibrated measures to overcome the tight liquidity condition after the fall out of the crisis have played an important role in bringing the economy back to the growth path. The series of visits of several heads of State to India in the recent months and the various pacts that have been signed would further strengthen India's position and improve its trading prospects. The future looks bright but the continuing increase in commodity prices has the potential to escalate costs and drive down corporate profits as well as increase the prices of end products. Inflation, especially food inflation has been in double digits and shows no sign of abating. The expected oil price rise would be a set back since the oil imports have substantially increased when compared to the period when oil prices touched $105 per barrel. Such price increases would further widen the already large trade gap, increase inflationary pressures in the economy and become a hurdle in the government's move to reduce deficits.

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MANAGEMENT OF STONE CRUSHING INDUSTRY AND ITS IMPACT ON EMPLOYEES AND ENVIRONMENT - A CASE STUDY

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ABSTRACT
The present study tries to find out the performance of SCUs, its impact on employees and environment. As one of the units of informal sector, the SCUs has been significantly contributing in strengthen the small scale sector with establishment of 12,000 units with annual turnover of US$ 1 billion and providing direct employment to over 500,000 people in its various activities. But the study extremely found that the SCUs have a regressive and insignificant impact on socio economic conditions of workers due to low wages, lack of working and welfare measures and environment…., Accordingly, the study intended some policy implications to balance the existence of SCUs, employees welfare and environment protection.

KEYWORDS
Environment, Emission, Informal Sector, living conditions, life expectancy pollution, vicious circle.

INTRODUCTION
The challenge we face today is to reconcile the demands of population growth (employment), the desire for continued industrial development and the need to preserve our environment. It necessitates finding new approaches to industrial development both in developed and developing countries that will allow us to preserve the ability of environment to sustain human life. Thus it can be said that the environment and the industrial establishment is the two sides of a coin which can not detach them; but every aspect has its own significance and effects on other establishment and they have to correlate each other to accomplish cost-effective goals. Keeping this in mind, the study tries to carry out to assess the impact of Stone Crushing Industry on Employees and Environment with the following objectives and methodology.

OBJECTIVES OF THE STUDY
1. To briefly analyze the prevalence of Stone Crushing Units in India
2. To study the economics privileges of SCUs on the workers
3. To find out the environmental effects and
4. Analyze the efforts to protect environment from the SCUs and
5. To furnish policy implications regarding SCUs and environmental protection in the study area

METHODOLOGY ADOPTED IN THE STUDY
SAMPLING
Multi-stage stratified random sampling method is used in the present study. The functioning of Orange category non-hazardous Stone Crushing Units is taken in to the study. There are 46 such units have functioning with more than 2000 workers in the surrounding area of the Perecherla village, Guntur district of Andhra Pradesh. The total selected respondents are 196. Of the total, about 98 households each from the workers of SCUs and non-SCU house holds have selected for compared the actual impact of these units on the workers.
DATA COLLECTION- TECHNIQUES OF ANALYSIS
Primary data from households is collected with the help of structured schedule. Trust worthy informants have picked up from the units. The required secondary data has been obtained from various Journals, newspapers District abstracts and concerned departments. In analyzing the data, ***Cross section analysis*** method is adopted.
STONE CRUSHING INDUSTRY AND ITS ECONOMIC SIGNIFICANCE
Stone crushing industry in India is an unorganized small-scale sector scattered all over India. It is basically a labor intensive small scale industry where most of the operations are performed manually. Most of the plant and machinery has been conventional in nature and fabricated locally and has lacunae in its design, layout &operation etc. The conversion of naturally occurring rock into crushed and broken stone products involves a series of distinct yet interdependent physical operations. These include both quarrying and mining operations (drilling, blasting, loading and hauling) and plant process operations (crushing, screening, conveying and other material handling and transfer operations). The mine stones are transported to the crusher sites besides road through tractor trolleys or pay-loaders. The pay-loaders unload the mined stones into materials such as stone mines, river beds etc., Based on these operations, the workers are employed at different places as per the nature of work and are exposed to silica dust of different concentrations. Most of the laborers who have work in stone crusher units are related to rural and economically backward areas where employment opportunities are limited and therefore it carries greater significance in terms of social importance in rural areas. It is a source of earning for the uneducated poor unskilled rural people.

It is estimated that there are over 12,000 stone crusher units in India. The number is expected to grow further keeping in view the future plans for development of infrastructure of roads, canals and buildings that are required for overall development of the country. In India, the Stone Crushing Industry sector is estimated to have an annual turnover of Rs.5000 crores (equivalent to over US$ 1 billion) and is therefore an economically important sector. The sector is estimated to be providing direct employment to over 500,000 people engaged in various activities such as mining, crushing plant, transportation of mined stones and crushed products etc (CPCB 2009).

The stone crusher is one such industry that exists in the vicinity of almost all major cities/towns throughout the country in all the states because the construction activities go on throughout the country. As transportation of stone over long distances adds to cost of the crushed stone products, the crushers need to be necessarily located nearer to the demand centers such as Cities, Bridges, and Canals. Stone Crushers also need electricity supply and large number of man power in its operation. It also needs access roads for the movement of mined stone as well as crushed stone products. That is why; most Stone Crushers are located along the periphery of Cities or in the vicinity of major construction projects. In most cases the Stone Crushers come up in clusters of number of units ranging from five to fifty in one cluster. The crushers are located nearer to the source of raw material such as Stone mines, River Beds and so on.

ENVIRONMENTAL PROBLEMS ASSOCIATED WITH STONE CRUSHERS

The stone crushing units is recognized socially and economically an important sector creates substantial turnover and employment to unskilled labour. But environmental pollution by way of the fugitive emissions affects the human health etc. Some of them are (www.apfed.net):

EMISSIONS DURING MINING: The stone is mined from stone mines with the help of blasting and breaking by mechanical means or manually. During blasting and other operations substantial amount of fugitive dust emission occur intermittently.

EMISSION DURING UNLOADING OF MIND STONES AT CRUSHER SITE: At the time of unloading of mine stones into the storage hopper, large amount of fine dust is emitted, which appears like dust cloud. These emissions are intermittent and last for about a couple of minutes during every unloading. Generally there could be two to six unloading per hour. These emissions occur at an elevated levels and the dust is carried by wind currents to long distances.

EMISSIONS DURING CRUSHING OPERATIONS*:* During the crushing operation size reduction takes place bigger stones are broken into smaller sizes and in the process some stone pieces get excessively crushed which, results into formation of stone dust. The finer dust gets airborne and escapes as fugitive emissions. The emissions occur at the inlet chute, from the crushers' body and from the discharge chutes. These emissions occur at all types of crushers such as primary, secondary, and tertiary crushers in varying degrees.

EMISSIONS DURING MATERIAL MOVEMENT AND TRANSFER: The crushed stone is moved from one place to the other such as crusher to vibratory screen, screen to crusher, and again to storage piles, and between conveyor belts. During the movement and free fall during transfer of crushed stone, fine dust particles get airborne as fugitive dust emissions.

Emissions during vibratory screening operation: During vibratory screening of crushed stones and due to vigorous movement of the stones, the fine dust particles get loose and airborne and fugitive emissions occur. These emissions escape from the openings around the screen as well as at the bottom of discharge location.

EMISSIONS DURING TRANSPORTATION: During transportation of the mined stones as well as the crushed stone products, due to vehicular movement on non-metallic roads, fine dust settled on the ground gets airborne.

SECONDARY EMISSION FROM STOCKPILES: Generally the crushed stone is stored in open in heaps/piles. AT times, when the wind sped is higher, the fine dust adhered to the stones is blown away from the stockpiles and gets airborne.

EMISSIONS DURING LOADING OF CRUSHED STONE PRODUCTS: The crushed stone products from the stockpiles are loaded into trucks or trolleys for dispatch. The loading is done either manually or with the help of conveyor belt. During loading, due to the movement of stones, the fine dust adhered to stone gets loosened up and gets airborne.

IMPACT OF SCUS ON THE WORKERS/EMPLOYEES

The following are major observations.

A BRIEF NOTE ON SOCIO ECONOMIC PROFILE OF THE RESPONDENTS

The age and sex of the workers is presented in table 1. Out of 98 respondents spread over 3 different locations namely Sixthmile, Tellaquary and Kailasagiri, the male and female workers are recorded by 56.12 percent and 43.88 percent.

TABLE - 1: AGE AND GENDER OF THE RESPONDENTS

Area	Age group of the respondents				Gender	
	<20	20-40	40-60	total	Male	Female
6th Mile	6 (75.0)	4 (5.56)	6 (33.33)	16 (16.33)	9 (16.36)	7 (16.30
White Quarry	2 (25.0)	12 (16.67)	2 (11.11)	16 (16.33)	10 (18.18)	6 (13.95
Kailasagiri	-	56 (77.78)	10 (55.56)	66 (67.35)	36 (65.45)	30 (69.77)
Total	8(8.16) (100.0)	72(73.47) (100.0)	18(18.37) (100.0)	98(100.0) (100.0)	55(56.12) (100.0)	43(43.88) (100.0)

Source: Field survey. Note: Figures in the brackets indicate the percentage to total

About 8.16 percent of the respondents are young- under less than 20 years followed by 20-40 years and 40-60 years of age group (included too old) with 73.47 and 18.37 percent respectively. Majority of the respondents are located at White Quarry. The average age of the young children is 7 years.

As per the perception of the workers, Illiteracy, Ill health, low earnings forced to place their children in the profession. Nevertheless the participation level of child labour is insignificant even though the average size of their family is large. There is no variation between working house holds and non-CSU households in this regard.

It is observed from the Table-2 that 50 percent each of the workers in three sample areas belong to Backward Castes (BC) and Scheduled Castes (SC). The similar has also taken from non-SCUs households. There is no variation between working house holds and non-CSU households (NCSHs) regarding size of the family.

Education is the most vital instrument to rural of economic transformation in the society. In the sample it is found that many (46.94 percent) of the respondents are illiterate. The remaining workers have possessed primary (by 29.59 percent) and secondary education (12.24 percent). No person in the sample acquired technical qualification through formal institution. Thus, low standard of living due to vicious circle of poverty nonappearance of skill up gradation and illiteracy is also one of the major causes to tackle this unskilled work.

MIGRATORY NATURE OF THE WORKERS

It is found that numerous of the labourers have migrated from long distance and different places of the states like Kurnool, Prakasam, Salem (Tamilnadu) and Orissa which are faced low level of living standards lack of sufficient employment opportunities and regular income opportunities at their native places. The workers in the White/Tella quarry and Kailasagiri are migrants from Tamilnadu state and they are extremely young couples.

TABLE - 2: SOCIAL AND EDUCATIONAL STATUS OF THE RESPONDENTS

Area	Social group of the respondents			Literacy		
	BC	SC	Total	Illiterate	Primary	Secondary
6th Mile (16)	8 (16.33)	8 (16.33)	16 (16.33)	7(43.75) (15.22)	7(43.75) (24.14)	2(12.50) (16.67)
White Quarry(16)	8 (16.33)	8 (16.33)	16 (16.33)	11(68.75) (23.91)	5(31.25)	0
Kailasagiri(66)	33 (67.34)	33 (67.34)	66 (67.34)	28(42.42) (60.87)	22 (33.33) (75.86)	10(15.15) (83.33)
Total(98)	49(50.0) (100.0)	49(50.0) (100.0)	98(100.0)	46(46.94) (100.0)	29(29.59) (100.0)	12 (12.24) (100.0)
Family size	4.3	5.4	4.6	-	-	-
Family size & literacy of non-SCUs members	4.2	5.1	4.2	45.11%	31%	23.89%

Source: Field survey. Note: Figures in the brackets indicate the percentage to total

LIVING CONDITIONS

All the workers in the sample are living in Slums. They do not have even minimum facilities like safe drinking water, drainage, septic latrines and the surroundings seems to be very dirty. Only 37.7 percent of workers have had municipal water and the others taking unsafe/ polluted water resources and suffering with Water born diseases as accepted the fact by the concerned local Health Officials. Water problem is dismal in case of NCSHs. Due to lack of housing facilities and lack of income to pay for transport these workers prefer to live near to mining, stone cutting work sites. They live in very small unprotected thatched houses.

ANNUAL INCOME OF THE WORKERS

The existing workers are classified in to 3 categories basing on their annual income levels and presented in table 2.it is concluded from the table that 50 percent of the workers are registered under Rs 10000-15000 in come group followed by 27.55 percent in Rs 15000-20000 income group and 22.45 percent are under income group of above Rs 20 thousand as per the study (table-2). *On an average, the annual income of the workers is more or less, Rs 14 thousand only.* This meager amount is not enough to attain at least comforts. *Meanwhile the annual income is recorded by Rs 25thousand in case of NCSHs*. More number of respondents of NCSHs is placed in the income group of Rs 20 thousand and above.

Wage loss is adding more woes to the workers. Nearly 44.3percent of the respondents are loosing Rs.200-400 per month as wage loss due to ill health. They are suffering wage loss during slack season and holidays. Workers are loosing 3-4 days job due to ill health in some weeks.

FAMILY EXPENDITURE

As mentioned earlier, the workers are unable to reach the minimum family needs. Nearly 67.20 percent of the workers are spending between Rs. above 2000 per month and 27.9 percent workers are spending between Rs.1500-2000 per month (table-3). Of the total expenditure, major amount is allocated for non food items especially on health (up to 15-20 equaling average to Rs 1500) percent to the total expenditure). Moreover, many of the workers feel relaxation from physical strain while consuming liquor. This adds to their total expenditure i.e., an average of Rs.30-50 per a day. It clear from the study that expenditure of the respondents is more than their earning so as to illustrate income expenditure gap (IEG). Therefore, they have fallen to debt trap and depending on the money lenders, Quarry owners and self help groups (SHGs) to fill the IEG. It is very low level in case of NCSHs.

MEDICAL FACILITIES IN THE STUDY AREA

RMP, PMP, Local clinics are sufficient in the Quarry area. Nearly 63.9 percent of the workers prefer to go to Private Medical dispensaries i.e., RMP, PMP, Local clinics. Only 36.1 percent are preferred to go to PHC or Community hospitals run by Govt. Distance (5-6Kms) and non-availability of proper medicines and negligence of staff are the major reasons to avoid them as complained by many.

TABLE – 2: ANNUAL INCOME OF THE RESPONDENTS

Area	Annual income			
	10000-15000	15000-20000	Above 20000	Total
6th Mile	10(62.50) (20.41)	4(25.0) (18.18)	2(12.50) (9.09	16(100.0) (16.33)
White Quarry	9 (56.25) (18.37)	3(18.75) (13.64)	4 (25.0) (18.18)	16(100.0) (16.33)
Kailasagiri	30(45.45) (61.22)	20(30.30) (74.07)	16(24.24) (72.72)	66(100.0) (67.34)
Total	49(50.0) (100.0)	27 (27.55) (100.0)	22(22.45) (100.0)	98(100.0) (100.0)
Non-SCUs members (%)	36.5	24.5	39.0	(98)100.0

Source: Field survey. Note: Figures in the brackets indicate the percentage to total

TABLE -3 MONTHLY FAMILY EXPENDITURE (% OF RESPONDENTS)

	Total Monthly Family expenditure				Monthly Family expenditure on health			
Area	1000-1500	1500-2000	above2000	Total	Below 500	500-750	750-1000	Total
6th Mile	66.7	47.1	24.4	32.8	29.8	100.0	-	32.8
White Quarry	33.3	11.8	12.2	13.1	12.3	-	100.0	13.1
Kailasagiri	-	41.2	63.4	54.1	57.9	-	-	54.1
Total (% to total 98)	4.9	27.9	67.2	(98)100.0	93.4	4.9	1.6	(98)100.0
Non-SCUs members(98)	3.9	22.0	62.0	100.0	75.0	13.0	1.2	100.0

Source: Field survey.

HEALTH PROBLEMS OF THE WORKERS/EMPLOYEES

The major problem of the workers is aggravated by dust pollution at the work place which caused to ill health especially Lung disease like Asthma, T.B, Skin, Physical Handicaps, Eye effect and Ear**,** Water born diseases etc are quite common.

It is recorded in table-4 that 34.4 percent of the respondents complain that they are suffering from Lung diseases like Asthma, T.B., etc. This makes the workers to spend much of their low incomes on healthcare.

As many as workers wounds their hands, legs and on other parts of their body caused to manual Stone cutting, blasting activities without enough care. The pieces of stones hit the worker with great force and cause the wound. Enough precautions have to be taken by the workers with kind support from owners of these stone crushing units

TABLE - 4: HEALTH/NON-INCOME PROBLEMS OF THE RESPONDENTS

Area	% of respondents to their total faced Problem / Diseases						Type of hospital visiting	
	Lung	Skin	PHs	Eye	Ear	Water born	Govt	Private
6th Mile	33.3	7.7	40.0	8.3	-	3.3	30.0	70.0
White Quarry	23.8	-	15.0	25.0	71.4	26.7	27.3	72.7
Kailasagiri	42.9	92.3	45.0	66.7	28.6	70.0	45.5	50.5
Total (% to total 98)	34.4 (35)	42.86 (42)	65.6 (64)	39.3 (39)	11.5 (28)	49.2	36.1	63.9
Non-SCUs members	17.5	31.33	41.45	28.0	2.0	45.9	54.0	46.0

Source: Field survey

Apart from the above organs Eyes are more exposed to stone dust and small pieces of stones. The lack of provision of goggles by the owners making workers' conditions miserable. Noise levels are more and consistent in and around the Stone Crushing sites. Continuous exposure to blasting, cutting, loading/unloading activities, aggravate the health problems especially ear problems of the workers.

About 49.2 percent respondents are exposed that they are suffering with water born diseases due to unsafe and polluted drinking water in Kailasagiri area, nearly 63.6percent of the respondents were made complaint in this regard. These problems are not significance in case of non-CSHs compared CSU workers.

LOW LIFE EXPECTANCE OF CSU WORKERS

The physical observations made in the sample area reveal that many have low life expectancy even lower to country's average i.e., 65 years. 34.4 percent have projected their life expectancy would be 55-60 years. 45.9 percent guessed it would be around 60-65 years among them. Only 1.6 percent workers are imagined more than 65 years but it is hard to find many older people in study area.

ROAD ACCIDENTS DUE TO POOR VISIBILITY CAUSED BY DUST POLLUTION

Road accidents are taking place near the stone crushing units but no complaint was lodged on the grounds of reduced visibility, in the sample area. As per the area police station, 38 deaths and 80 losses of limb cases were recorded during the last five years.

REPREHENSIBLE MANAGEMENT OF SCUS & ITS IMPACT

Many studies revealed that stone crushing units which violate norms and function near to highways and operate without proper dust reducing techniques because reduced visibility. The blowing winds of hot summer exaggerate the problem. Absence of wind breaking walls, well paved roads, sprinkling of water, plantation is clearly visible and can easily identify by any person. Pollute control board (PCB) officials, civil society are able to convince the unit owners to adopt cleaner production techniques like covering the crushers, conveyors, dumping arrangements but faulty, partial, neglected, half hearted implementation causing severe dust emissions.

Despite the denial by the Medikonduru Police statistics, many accidents could be the result of high dust pollution of stone crushing units. GAMANA -the NGO filed a petition in the Hon. High Court of A.P against the stone crushing units that violated establishment norms because the units are very near to highway.

The PCB, AIR Act, Environment impact assessment (EIA) for stone crushing units laid down many norms to abate pollution. But the partial implementation of PCB norms reason for Air Pollution around the village.

CONCLUSIONS

No doubt to say that the informal sector is the major source to employment opportunities. Crushing stone industry is one of the informal sectors which possible to establish at lower cost of production and contribute significantly in extend infrastructure. It is estimated that there are over 12,000 stone crusher units with annual turnover of US$ 1 billion. The sector is estimated to be providing direct employment to over 500,000 people engaged in various activities such as mining, crushing plant, transportation of mined stones and crushed products etc. but the Crushing stone industry has criticism as polluting the environment. The impact of SCUs on socio-economic conditions differ than NCSHs. Interestingly, it is generally expect that the socio economic conditions would be better than the others. But it is reverse in case of CSI. Low income, ill health, etc are common problems of the workers compared to non-NCSHs in the study area.

POLICY IMPLICATIONS TO BALANCE THE SCUS, WORKERS AND ENVIRONMENT

The main problem in containing the dust pollution from stone crushing industry units seems to be the improper implementation of PCB norms by the units and less capable PCB machinery which is able to neither measure nor contain the dust pollution. The following measures can be positively acts in this regard.

- PCBs should be well equipped to estimate the pollution at regular intervals. Other wise, absence of proper equipment to measure the pollution level, giving free hand to industry owners can pollute without any fear.
- More coordination among different Govt. agencies, departments is required to supervision the local industries in controlling pollution and as noticed PCB.
- Corruption, political interference, red-tapism in dealing of environmental aspects should be brought down to zero level. It may be possible through strict Punishment to the violators.
- Various options of low cost, recycled, pollution free technologies have to be made available by the Government to the unit owners to adopt them easily. Govt. should provide more subsidies to buy eco friendly technology.
- Fly ash bricks can be used to construct High wind breaking walls around stone crushing units.
- Van samrakshan Samithis (VSS) and NSS units can be mobilized to plant and protect more saplings around the stone crushing units.
- Stone crushing units must be taxed heavily on account of pollution.
- Industry owners by forming clusters should tap renewable energy resources to produce power.
- The NGOs, researchers, common citizen, and media must be more vigilant and active in containing the pollution and in supporting the concerned authorities.
- Management should provide ownership to the workers of the stone quarry. It helps the workers to earn more and improved economic conditions and feel response regarding the maintenance and development of the units.
- The workers safety' should also mandatory of the owners of stone crushing units. Sufficient compensation has to be paid to the victims.
- The living standards, education, health facilities for the workers have to be improved to a large extent. These measures can useful to the SCUs, works and to control pollution at some extent.

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