



INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE AND MANAGEMENT

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STRATEGIC MARKETING PRACTICES ON THE PERFORMANCE OF FIRMS IN NIGERIAN OIL AND GAS INDUSTRY

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ABSTRACT

The purpose of this thesis is to investigate the impact of strategic marketing practices on the performance of firms in the downstream sector of the Nigerian oil and gas industry. The specific objectives of the study include the exploration of the possible differences in organizational structure and strategies adopted and how they affect the performance of Nigerian oil and gas marketing companies; showing how the strategy of marketing mix (product, price, place and promotion) influence or affect the diversification and concentration of Nigerian oil and gas marketing companies' performance; determining how the industry environmental performance indices can affect the various strategies and factors of Nigerian oil and gas marketing companies. This study adopted a survey research methodology to examine the strategic marketing practices of Nigerian oil and gas marketing companies in an attempt to attain their desired level of performance. Three hundred and forty one (341) respondents were chosen from the target population of two thousand three hundred (2300) through stratified random sampling. Out of the 341 copies of the questionnaire given out, two hundred and eighty six (286) copies representing 83.87% responses were received for analysis.

Two hypotheses were formulated from the research questions. Analysis of Variance, Pearson Moment Correlation Analysis, Factor Analysis among other statistical tools were used in testing the hypotheses. The overall results suggest that strategic marketing is a driver of organizational positioning in a dynamic environment, and that it helps to enhance the development of new product/service for existing markets. These findings, along with other interesting findings of the study, are discussed. From the empirical and anecdotal managerial evidence as well as from the literature implications are drawn for the efficient and effective strategic marketing practices in the Nigerian oil and gas industry. Based on the findings of the study, the concepts and principles of total quality management within a holistic framework it is recommended that (i) efforts should be made by organizational marketers towards understanding the relevant economic factors that affect both clients' behaviour and the strategic options that may be adopted to cope with such behaviours; (ii) oil and gas marketing academics should endeavour to study holistically the relevant business functions and activities which may enhance or hinder the understanding and application of relevant modern management concepts and principles to oil service marketing; (iii) in a constantly changing business environment, firms can adopt different strategic marketing practices since the yardstick is the enhancement of business performance.

KEYWORDS

Dynamic environment, Strategic Marketing, Strategies, Performance, Resources.

INTRODUCTION

To achieve a set of organizational goals and objectives, companies conceptualize, design, and implement various strategies. These strategies can be corporate, business, or functional. Marketing strategies constitute one of the functional strategies amenable to application by contemporary companies in order to enhance performance. Marketing has been defined and conceptualized in various ways, depending on the author's background, interest, and education (Osuagwu 1999). For example, marketing can be seen as a matrix of business activities organized to plan, produce, price, promote, distribute, and megamarket goods, service, and ideas for the satisfaction of relevant customers and clients. Achumba and Osuagwu (1994) also posit that marketing is important for the success of any organization, whether service- or product-oriented. Bolaji (2003) argues that the oil and gas service sector constitutes a service industry that has currently been changed by aggressive strategic marketing behaviour. According to (Okoroafo 1993), indigenous Nigerian oil and gas marketing companies were not profoundly entrepreneurial at the beginning for the following reasons: lack of trained manpower, poor infrastructural development, lack of adequate or sufficient capital base on the part of the indigenous oil and gas marketing companies and intense competition from superior foreign companies. Therefore, early indigenous Nigerian oil and gas marketing companies were operated by regional governments entrusted with ownership responsibilities. The relatively good performance of these regional oil and gas marketing companies, in addition to the liberalized regime of governments of the day pertaining to regulations in the oil and gas industry, resulted in the proliferation of oil and gas marketing companies. This proliferation forced the oil and gas marketing companies to design and implement efficient and effective marketing strategies, in addition to other strategies that could rescue the Nigerian economy out of the woods.

However, with the few functional and reasonably competitive oil and gas marketing companies in Nigeria, low indigenous/local investment, and little foreign investment in the Nigerian economy, existing oil and gas marketing companies in Nigeria compete fiercely for available businesses. This has, consequently, led to the design of all forms of marketing strategies by Nigerian oil and gas marketing companies in order to survive, grow, and achieve their set goals and objectives. The petroleum industry is considered to be one of the largest and most powerful industries in the global market with its operations covering every corner of the globe and with the world's energy heavily dependent on oil and gas products (Amnesty International 2004). Today, activities in the petroleum industry are composed of various procedures including exploring, extracting, refining, transportation and marketing of the petroleum product.

The sensitivity of petroleum resource is clearly reflected in the fact that it has remained or continued to be the goose that lay a golden eggs for the Nigerian economy as well as the supreme foreign exchange earner contributing over 80% of government revenues and helps the development of Nigeria's infrastructures and other industries (Anyia 2002; Chukwu 2002; Gary and Karl 2003). In view of the critical importance of the sector to the nation's economy and its capacity to generate far-reaching multiplier effect, the grooming of highly skilled indigenous manpower to participate keenly in the activities of the sector to redress the foreign dominance becomes imperative (Baker 2006). The rapid development of an indigenous technical workforce has become more compelling than ever before against the background of the expected imminent injection of massive investment in the sector. With a current production capacity of about 30 million barrels per day (bpd), Nigeria plans to increase her production capacity to about 40 million bpd by 2010 (Utomi 2001; Obi 2003; Mathiason 2006). Already, Nigeria is the leading oil and gas producer in Africa, currently ranked the seventh highest in the world (NNPC 2004; The Guardian 2006).

In addition to the above, Nigeria which is widely referred to as a gas province, has natural gas reserves that triple crude oil reserves, being estimated in excess of 187.5 trillion standard cubic feet (scf) (Africa Oil and Gas 2004). The foregoing underscores the vast investments and potentials of the Nigerian petroleum sector, and therefore calls for commensurate investments in the development of the Nigerian human capital base. The Federal Government has stated that one of its objectives is to achieve 50 per cent local content in the oil and gas sector by 2010. Adegbulugbe (2002) observes that Nigeria began exporting oil in 1958 with crude oil production of 5000 barrels per day (bpd) rising by 1979 to a peak of 2.3 million bpd. Currently, Nigeria's crude oil production is about 1.5 million barrels per day (bpd) and is expected to rise to 2.5 million bpd. Nigeria is the 13th largest oil producer in the world and 6th largest oil producer among the Organisation of Petroleum Exporting Countries (OPEC). Determined by crude oil reserves and output, gas reserves and output, refinery capacity and product sales volume, Nigeria ranks first in Africa in oil production. It ranks 5th in gas reserves which makes the country more of a gas rather than an oil country (CBN 2002). Indeed, Nigeria is often described as a gas zone with some oil in it. However, gas resources are largely untapped and Nigeria's gas reserves place it among the top ten countries in the world in that category (Assael 2000; Ekpu 2004). Assael (2000) and Ekpu (2004) also observe that other energy resources such as hydro power, wind energy, and coal, which is produced in Enugu and Benue States abound in the country. Nigeria is in fact the only coal-producing West African nation. About 43% of Nigeria's natural gas is associated with oil which according to (Ekpu 2004) is unfortunately largely flared to the detriment of the economy. Energy consumption is in the area of petroleum products, which according to (Assael 2000; Dixton et al 2005), accounted for between 70% and 80% of total energy consumed in Nigeria between 1970 and 1980, the major consumers being the transportation, household and industrial sectors.

This study is intended to expand the body of knowledge in respect of the application of strategic marketing practices to the oil and gas sector especially in a developing economy like Nigeria that earns over 80% of her foreign exchange from oil and particularly, as the Federal Government is putting in place policies and strategies to improve the oil sector's contributions to the Nigeria economy (Garuba 2006).

STATEMENT OF RESEARCH PROBLEMS

The problem statement, according to (Wiersma 1995), describes the content for the study and it also identifies the general analysis of issues in the research necessitating the need for the study (Creswell 1994). The research is expected to answer questions and provide reasons responsible for undertaking the particular research (Pajares 2007). The problem of this study is to measure, analyse and establish the impact of organization expenditure on oil and gas industry performance variables which include effect of structure/strategies, the diversification and concentration, environmental performance indices and goal actualization of the organization objectives. Many research efforts in the area of marketing practices in developing economies have dealt with macro issues and emphasized the management of company's structure and strategies, conduct and performance of marketing activities as they relate to performance indices such as market share, growth, efficiency and well being of consumers and clients (Boyd et al 1994; Baker 1995; Bauer 1998; Samli and Kaynak 1994) lament that the key defect with this static and macroanalysis of marketing practices in developing economies is that it minimizes the impact of marketing environment on the achievement of performance measures. Also, although some research efforts have been undertaken to explain marketing practices in developing economies at the organizational level (Westfall and Boyd 1990; Samli 1994; Wadimambiaratchi 1995; Cravens et al 1990), many of these research efforts do not provide answers to issues pertaining to the impact of

company's structure and strategies on the performance of mineral prospecting industries particularly the oil and gas marketing companies. The deregulation of the Nigerian economy through the Structural Adjustment Programme (SAP) affected the oil and gas sector in Nigeria in many ways (Miles and Snow 1978 ;Umunnaehila 1996). These include the diversification and concentration of marketing activities and the need to apply the marketing mix elements such as price, place, product, and promotion to meet the needs and wants of customers and also survive in intense competition within and outside the Nigerian oil and gas industry. The restructuring policy of SAP, brought deregulations in the sector and encouraged many new oil and gas marketing companies to enter into the oil and gas industry. This resulted in oil and gas companies seeking for clients and designing services that would meet clients' needs and wants. Consequently, the Nigerian oil and gas companies incorporated the usage of various market mix elements to improve their market outreach/ coverage, new product ratio, price positioning, competitive orientation,etc to survive and grow (Umoh 1992; Udell 1998; Osoka 1996 ; Adler 1997 ; Johnne and Davies 2002). The poor condition of some oil and gas marketing companies in Nigeria is a function of some interrelated problems. According to (Sheng 1999 ; Day and Reibstein 1997 ; Kim and Mauborgne 1998 ; Johnne 1999 ; Kandampully and Duddy 1999), the causes of the oil and gas marketing companies failure or poor performance, are due to microeconomic or macroeconomic factors (performance industry environmental factors indice coupled with the management of marketing content and product marketing). Mamman and Oluyemi (1995) ;McDonald (1996) and Creveling (1994) have, however, posited that oil and gas companies poor performance in Nigeria is a function of industry environmental factor indices and marketing of oil and gas services. Faced with the compelling need to achieve their organizational goal, oil and gas companies in Nigeria must explore new avenues, approaches, strategies or practices to achieve their set goals and objectives. Generally, marketing strategy deals with adapting the marketing mix elements to environmental factors. It evolves as a result of the interplay of the marketing mix elements and the environmental factors, which impact on these elements (Scnars 1991; Li et al 2000 ; Aristobulo 1997; Jain 1993 ; Mavondo 2000). Therefore, the function of marketing strategy deals with determining the nature, strength, direction, and interaction between marketing mix elements and the environmental factors in a particular situation (Jain and Punj 1987; Osuagwu 2001; 2001; 2004). However, achieving efficient and effective product marketing strategy by an organization is difficult, as a result of the ambiguity and instability of environmental factors (Brownie and Spender 1995). The peculiarities of oil and gas marketing services may create or set modalities for goal actualization parameters that are different from those found in the marketing of tangible products. The peculiarities may, also, require unique inter-industry/marketing commitment and approaches. However, marketing concepts, principles and goals are of relevance in the marketing of oil and gas service. Sound and robust marketing commitment on the part of organization and sales-people are important to the survival and growth of the oil and gas industry, considering the subtle, unstable and seemingly hostile business environments in which contemporary business organizations operate (McDonald 1996; Creveling 1994). In order to formulate and implement effective and efficient goal actualization and inter-industry marketing commitment in product distribution, oil and gas companies should have a thorough and continuous understanding of the relevant environment that impacts on their marketing strategies (McDonald 1989; 1992 ; 1996).

Today, obtaining and retaining a dominant position in the market has become very difficult due to the vast spread of products and services and the aggressive competition on one side and increasing customers demand on the other side. Also rapid transitions of information age and appearance of new economies set forth customer as a valuable asset and communicating successfully with (internal and external) customers is an essential part of doing business which create competitive advantage in the external environment and enhance inter-industry marketing commitment in internal environment, in a manner that all of the resources and technologies of an organization should combine with internal and

external customers in order to have a sustainable competitive advantage and organizational commitment. Successful organizations are those that integrate efficient and effective management in internal and external dimensions through external relationship management and enhancement of inter-industry marketing commitment and goal actualization among internal and external customers. Internal marketing paradigm is a mechanism for the managers to analyze the organizational issues which need to be addressed in implementing marketing strategies. It is therefore, imperative for organizations to establish an important framework of legitimacy for new directions and transformations and accommodate the constant process of change management and knowledge management.

OBJECTIVES OF THE STUDY

The main focus of marketing activities of oil and gas marketing companies is the identification and satisfaction of clients' needs and wants. These objectives can be attained by identifying the likely marketing mix variables and strategies, including relevant environmental impacts on them. There is, therefore, the need to carry out this research given the enormity of the problem facing the oil and gas industry. Specifically the study sought to investigate the following:

- 1) To explore the possible differences in the organizational structure and strategies adopted and how they affect the performance of Nigerian oil and gas marketing companies.
- 2) To show how the strategy of the marketing mix (product, price, place and promotion) influences and affects the diversification and concentration of Nigerian oil and gas marketing companies.

RESEARCH HYPOTHESES

The following null hypotheses are considered in this study:

- a) The organizational structure and strategies adopted do not affect the market share of Nigerian oil and gas marketing companies.
- b) Marketing mix strategy, diversification and concentration adopted do not yield higher rate of performance of Nigerian oil and gas marketing companies'.

LITERATURE REVIEW

DEVELOPMENT OF MARKETING PRACTICES

Marketing strategies and tactics are concerned with taking decisions on a number of variables to influence mutually-satisfying exchange transactions and relationships. Typically, marketers have a number of tools they can use, these include megamarketing (Kotler 1996) and the so-called 4Ps of marketing (McCarthy 1995), among others. Marketing seems easy to describe, but extremely difficult to practice (Kotler and Connor 1997). Organizational managers in many firms have applied the so-called marketing concept, which may be simple or complex. The marketing concept and variants like the total quality management concept for example, are essentially concerned with satisfying clients' needs and wants beneficially. Developing and implementing efficient and effective marketing strategies which incorporate relevant dimensions of the marketing concept involve the organic tasks of selecting a target market (customers/clients) in which to operate and developing an efficient and effective marketing

ingredient combination. Marketing thought, with its practice, has been moving speedily into the service industry (Kotler and Connor 1997). Literature, partly, centres on the discussion of whether physical product marketing is similar to, or different from, the marketing of service and concludes that the differences between physical product and service might be a matter of emphasis rather than of nature or kind (Creveling 1995). Marketing is one of the salient and important organic functions which help to service organizations to meet their business challenges and achieve set goals and objectives (Kotler and Connor 1997). The word “service” is used to describe an organization or industry that “does something” for someone, and does not “make something” for someone (Silvestro and Johnston 1990). “Service” is used of companies or firms that meet the needs and wants of society such organizations are essentially bureaucratic (Johns 1990). “Service” may also be described as intangible its outcome being perceived as an activity rather than as a tangible offering. The question of the distinction between services and tangible products is based on the proportion of service components that a particular offering contains (Johns 1990).

A service may therefore be seen as an activity or benefit which can be offered to an organization or individual by another organization or individual and which is essentially intangible. It is a separately identifiable but intangible offer which produces want-satisfaction to the client, and which may or may not be necessarily tied to the sale of a physical product or another service (Osugwu 1999). Services include a wide range of activities and form some of the growing sectors of the economies of developed and developing countries. Services include professional services (legal, accounting, medical, management consulting, etc), general services (insurance, postal, telephone, transportation, internet, tourism, etc), maintenance and repair services, and services from marketing researchers and product manufacturers, among others. Oil and gas service is not a tangible thing like food, clothing and car. Sound and robust marketing strategies are important to the survival and growth of any business, including oil and gas business, considering the increasingly subtle, unstable and seemingly hostile business environments in which contemporary business organizations operate (McDonald 2004 and Creveling 2005). Therefore, in order to formulate and implement efficient and effective marketing strategies, business organizations should have a thorough and continuous understanding of the relevant environment that impacts on their marketing strategies. According to (Schnars 1991), marketing strategy has been a salient focus of academic inquiry since the 1980s. There are numerous definitions of marketing strategy in the literature and such definitions reflect different perspectives (Li et al 2000). However, the consensus is that marketing strategy provides the avenue for utilizing the resources of an organization in order to achieve its set goals and objectives. Generally, marketing strategy deals with the adapting of marketing mix-elements to environmental forces. It evolves from the interplay of the marketing mix elements and the environmental factors (Li et al 2000). Therefore, the function of marketing strategy is to determine the nature, strength, direction, and interaction between the marketing mix- elements and the environmental factors in a particular situation (Jain and Punj 1997). According to (McDonald 1992), the aim of the development of an organization’s marketing strategy development is to establish, build, defend and maintain its competitive advantage. Managerial judgment is important in coping with environmental ambiguity and uncertainty in strategic marketing (Brownie and Spender 1995). Marketing strategy development has the following peculiarities:

- 1) It requires managerial experience, intuition and judgment (Little 1990; Mintzberg 1994a; 1994b; 1996; Brownlie and Spender 1995; McIntyre 1992; Alpar 1991).
- 2) It carries a high level of uncertainty and ambiguity (Brownlie and Spender 1995).
- 3) It is business sphere knowledge- intensive (McDonald and Wilson 1990; Duberlaar et al 1991).

- 4) It entails a broad spectrum of strategic information (Mintzberg 1994b ; Berry 1997).
- 5) It is a process which usually involves subtle decision making by organizational managers based on exhaustive examination of relevant environments and a synthesis of essential and useful pieces of information (Mintzberg, 1994a and 1994b);
- 6) It is specifically concerned with devising an approach by which an organization can effectively differentiate itself from other competitors by emphasizing and capitalizing on its unique strengths in order to offer better customer/client value over a long period of time (Jain and Punj 1997). However, it is difficult for an organization to achieve an efficient and effective marketing strategy (Li et al 2000). As a result of the ambiguity and instability of environmental factors, strategic marketing may be a difficult task for organizational strategists. Many factors prevent organizational managers from designing and implementing efficient and effective marketing strategies (McDonald 1992). The fact is that environmental factors generally interact in an astonishing manner and affect the efficiency and effectiveness of managers in strategic marketing issues (McDonald 1989; 1996). Against this background, the present research attempts to assess the marketing strategies of Nigerian oil and gas marketing companies, the impacts of environmental factors on such strategies and the effectiveness of the marketing strategies. The oil and gas industry seems to have witnessed some form of corporate performance over the years which can be attributed to their distinct level of market share (Okwor 1992; Falegan 1991 ; Daniel 1998 ; Olawoyin, 1995 ; Ogunrinde 1990).

DEFINITION OF STRATEGIC MARKETING

The early strategic marketing - performance studies date from the time of rapid expansion of formal strategic marketing in the 1960s (Henry 1999). Although some studies employed diverse methodologies and measures, they shared a common interest in exploring the financial performance consequences of the basic tools, techniques, and activities of formal strategic marketing i.e. systematic intelligence-gathering, market research, SWOT analysis, portfolio analysis, mathematical and computer model of formal planning meetings and written long- range plans. The studies did not generally examine the relationship between performance and the extent of formal planning; variously referred to as “comprehensiveness, rationality, formality, or simply, strategic marketing”. According to Allison and Kaye (2005), strategic marketing is making choices. It is a process designed to support leaders in being intentional about their goals and methods. Differently expressed, strategic marketing is a marketing management tool and like any tool, it is used for one purpose only namely to help an organization to do its job better. Hence, strategic marketing is a systematic process by which an organization agrees on and builds commitment among key stakeholders to priorities that are essential to it and are responsive to the environment. Bryson (2004) observes that strategic marketing is a disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it, with a focus on the future. Woodward (2004), argues that strategic marketing is a process by which one can envision the future and develop the necessary procedures and operations to influence and achieve the future. Organizations can develop a planning process based on six simple questions. Realistic answers to these can help to guide the owners and managers of any business or organization toward a successful future.

Strategic marketing, according to (Berry 1997), is the process of determining (i) what your organization intends to accomplish and (ii) how you will direct the organization and its resources towards attaining the goals set over the coming months and years. In other words, strategic marketing is a tool for finding the best future for your organization and the best path to reach the desired destination. Higgins and Vincze (1993); Mintzberg (1994); Pearce and Robinson (1994) are of the opinion that strategic marketing can be defined as the process of using systematic criteria and rigorous investigation to

formulate, implement, and control strategy, and formally document organizational expectations. Kudler (1996), views strategic marketing as the systematic process of determining the firm's goals and objectives for at least three years into the future and developing the strategies that will guide the acquisition and use of resources to achieve the set objectives. Steiner (1997), sees strategic marketing as the process of determining the mission, major objectives, strategies and policies that govern the acquisition and allocation of resources to achieve organizational aims. Strategic marketing has come to be "inextricably interwoven into the entire fabric of management", it is not seen as separate and distinct from the process of management. Bradford and Duncan (2000), argue that strategic marketing is an organization's process of defining its strategy and making decisions on allocating its resources to pursue this strategy, including its capital and people. The outcome is normally a strategic plan which is used as a guide to define functional and divisional plans, technology, marketing among others. Hunsaker (2001) observes that strategic plans apply to the entire organization. Paley (2004), sees strategic marketing as representing the managerial process for developing and maintaining a strategic fit between the organization and changing market opportunities.

Gup and Whitehead (2000), on other part, see strategic marketing as the formulation of a unified, comprehensive and integrated plan aimed at relating the strategic advantages of the firm to the challenges of the environment. Anderson (2004), states that strategic marketing is the logical and systematic process by which top management reaches a consensus on the major strategic direction of the company. He enumerates major characteristics of strategic marketing as:

- a) a process of deciding in advance what will be done, when and by who, and how it will be done:
- b) the future impact of current decisions,
- c) an integral part of the management process, and
- d) a structure of plans integrating major objectives, strategies, policies and functions of the organization.

Finally, he states that for strategic marketing to succeed, an appropriate climate must exist, top management must be committed and involved, and there must be a disciplined but flexible planning approach. He further observes that line personnel must participate, performance standards for monitoring and evaluation must be established and planning must be integrated with decision making. Paley (2004), advocating the adoption of strategic marketing in solving organization's problems, remarks that the organization which does not plan for its future does not deserve any future. Citing the work of (Ansoff 1988), he contrasts strategic marketing with long-range planning and concludes that both concepts are not synonymous. He argues that long-range planning is based upon the extrapolation of past situations, a questionable premise on the ground that present conditions are not the same as those of the past. Ulrich & Barney (1984), further criticize the traditional extrapolation techniques of long range planning and suggest the use of scenario analysis which encourages broad and creative thinking about the future. The authors cite the work of (Wing 1997), which contests that traditional forecasting techniques are based on the assumption that tomorrow's world will be much like today's. Commenting on 'New Age' Strategic marketing Ginsberg (1997) explains that the present complex environment is characterized by side effects, time delays, non-linearity and multiple feedback processes. He then concludes that traditional strategy tools are no longer adequate in designing superior strategies. He consequently advocates the use of the holistic systems approach as opposed to the esoteric ways of the 'old'. Ansoff (1988), reports that newly invented strategic marketing displaced long range planning because of the growing discontinuity of the environment.

Hinterhuber (1992), argued that a manager is not necessarily a strategist and that a manager's vision is also not an entrepreneurial vision. Realizing however that strategic marketing process does not specify

how plans should be translated into action, the issue of strategic marketing implementation led to the evolution of strategic marketing management.

EMPIRICAL STUDIES ON STRATEGIC MARKETING

Various studies have examined the relationship between strategic marketing and performance in the manufacturing industry (Crysler 1998 ; Rajaratnam and Chonko 1995 ; Sampson and Showalter 1999), and the service industry (Cleverley and Harvey 1992; Crysler 1998; Eastaugh 1992; Lackmann 2003; Luhby 1999 ; Mckee et al 1996 ; Short et al 2002; Smith et al 1992). Only very few studies have been done on the oil and gas industry (Cleverley and Harvey 1992 ;Eastaugh 1992 ; Mckee , Varadarajan and Vassar 1996; Short, Palmer and Ketchen 2002 ; Smith, Piland and Funk 1992) and there is little or no discussion of the impact of strategic marketing on the performance of participants in the downstream sector of oil and gas in Nigeria.

Most of these studies relating to strategic marketing and performance in the oil and gas industry have been undertaken almost exclusively within the United States context (Cleverley and Harvey 1992; Eastaugh 1992 ; Short, et al 2002 ; Smith, et al 1992). Given that the Nigerian oil and gas industry is considerably different to that of the United States, this study was designed to examine whether the performance of downstream sector in Nigeria is influenced by their strategic marketing activities. These findings are supported by strategy and performance literature that has found that strategic marketing influences an organization's performance (Armstrong 1991; Chang et al 2003 ; Cleverley and Harvey 1992; Das 2001; Eastaugh 1992; Johnson and Scholes 2002 ; Miller and Roth 1994); Morgan et al 1987 ; Watkins 2003). In the same vein, (Miller and Roth 1994) claimed that strategic marketing activities are widely believed to improve the performance of organizations. Schmenner (1995), also concluded that some strategic marketing activities affect turnover, productivity, and financial performance of organizations. Johnson and Scholes (2002), found that strategic marketing activities have the most significant effects on firm's outcomes such as productivity, turnover, and performance.

One of the clearest demonstrations of the causal effect of strategic marketing activities on performance comes from a study of a five year survival rate of 136 non- financial companies that initiated their public offering in the U.S stock market in 1988. By 1993, only 60 percent of these companies were still in existence. The empirical analysis revealed that with other factors such as size, industry, and even profits statistically controlled, both the value the firm placed on resources such as whether the company cited employees as a source of competitive advantage and how the organization reward people such as stock options for all employees and profit sharing were significantly related to the probability of survival. Empirical research began to examine the performance and consequences of formal strategic marketing e.g (Thune and House 1990). Over 40 strategic marketing-performance studies have appeared since that time. However, in recent year this line of research has slowed to a trickle, and with good reason. Previous studies lacked theoretical grounding, produced a bewildering array of contradictory findings, drew heavy criticism for inadequate methodologies, and has little or no discernable net impact on strategic marketing management research or practice (Shrader et al 1984 ; Schmenner 1995). Nonetheless, it seems evident that the planning –performance relationship bears significantly on strategic marketing research and practice, and that scholars should not abandon this line of enquiry altogether. This study reevaluates the strategic marketing-performance research; the impact of strategic marketing practice on the participants in the downstream oil industry.

The result from past researches suggested that the intensity with which organizations engage in the strategic process has a direct positive effect on organization's performance, and mediates the effect of managerial and organizational factors on organization's performance. Results also indicated a reciprocal

relationship between strategic marketing intensity and performance (Smith et al 1992). There is a constant need for organizations, especially oil industries to think strategically about what is going on (Schmenner 1995). This appears to be precisely what organizations, in particular have begun to do in recent years. In response to increasing complexity and change in the oil industry, organizations have turned to strategic marketing. The relatively new trend towards strategic marketing in organizations is viewed as a move designed not only to help them negotiate their environment more effectively, but to improve their financial performance as well (Bird 1991; Das 2001). Subsequently, the consideration of such factors in the present study is viewed as a significant issue that holds implications for future research as well as for strategic marketing management.

METHODOLOGY

A cross-sectional survey was selected for this study because it was easy to undertake compared to longitudinal survey and the result from the sample can be inferred to the larger population. In addition, some extraneous factors could have manifested in the observed change other than the independent variable concerned. The target population in the study was the employees of product pipeline marketing companies in Lagos, Nigeria. A structural questionnaire was used to collect data from the respondents. The questionnaire was developed to capture the information on the level of respondents, knowledge on the main purpose of performance of appraisal system and a assessment of the awareness of performance appraisal by the university. The questionnaire was pre-tested with respondents in other product marketing company, to authenticate reliability. The pre-testing was done to avoid any possible influence on trial respondents before the actual survey. The analyzed data was presented using descriptive statistics, frequency tables, Analysis of Variance, and Correlation coefficients. Descriptive statistics allow the generalization of the data to give an account of the structure or the characteristics of the population as represented by the sample.

POPULATION OF THE STUDY

The subject for the research study consists of a stratified simple random sample of marketing executives in Nigerian oil and gas marketing companies. The Nigerian oil and gas year book of 1999 provided the list of Nigerian oil and gas marketing companies from where the random sample was drawn. The respondents consist of Assistant General Managers, Senior Managers, Managers, Assistant Managers, and Officers responsible for marketing activities in their respective oil and gas marketing companies. The population shows that the estimated registered oil and gas marketing companies in Nigerian is put at two thousand five hundred (2500).

SAMPLE SIZE DETERMINATION

One important step when conducting a survey is to select the sample size. The larger the size of the sample the greater its precision or reliability, but there are constraints to be dealt with. The constraints are time, staff and cost. The sample size of this study is determined by the one postulated by Guilford and Fruchter (1973) which is assured to be best suited for this study. The population statistical formula is as follows:

$$n = \frac{N}{\dots\dots\dots}$$

$$1+(Ne)^2$$

Where:

n= The desired sample size to be determined

N= Total population

e= Accepted error limit 0.05 on the basis of 95% confidence level

Where

N= 2300, e=0.05, n=sample size

Therefore n= 2300

$$1+2300(0.05)^2 = 341 \text{ respondents}$$

DATA ANALYSIS, FINDING AND DISCUSSIONS

Table 1: Descriptive Statistics of Perception placed on Oil and Gas Marketing Strategy Variables (n=286)

Variables	Mean	Standard Error	Standard Deviation	R ₂	Cum. High(%)	Cum.Low(%)
Unstable, rapidly changing environments provide more opportunity	5.50	.22	.71	.50	40.0	60.0
Lowest cost relative to competitors	4.30	.37	1.16	1.34	80.0	20.0
Company reactive than proactive	2.70	.47	1.49	2.23	30.0	70.0
Identifies causes of problems before making strategic decisions	4.0	.39	1.25	1.56	70.0	30.0
Speed of product/service development is an important priority	5.10	.23	.74	.55	70.0	30.0
Work hard in maintaining lowest cost possible	5.10	.23	.74	.55	70.0	30.0
Faster in responding to competitors action	5.00	.30	.94	.89	90.0	10.0
Make profit by delivering above average quality	4.50	.50	1.58	2.50	80.0	20.0

product/services						
Access longterm implications of change in technology	3.50	.60	1.90	3.61	50.0	50.0
Places strong emphasis on research and development	3.60	.50	1.58	2.49	70.0	30.0
Frontload production by building capacity ahead of sales	4.20	.36	1.14	1.29	60.0	40.0
Develop product/services faster than competitors	4.40	.60	1.89	3.60	70.0	30.0
Taking relational advantage of economies of scale is an important goal	3.60	.40	1.27	1.60	50.0	50.0
Product/services far exceeds competitions	4.10	.41	1.29	1.66	70.0	30.0
Structure makes it difficult for competitors to come easily	3.30	.58	1.83	3.34	60.0	40.0
Structure lets someone else break new new grounds	3.30	.56	1.77	3.12	50.0	50.0
Enforce legal provision in order not to be in conflict with environment	3.90	.59	1.85	3.43	60.0	40.0
Anticipates how competitors might respond to strategic actions	3.70	.37	1.16	1.34	60.0	40.0
Assess longterm forecast of sales	3.50	.62	1.96	3.83	90.0	10.0
Places emphasis on legal or regulatory matters	3.20	.61	1.93	3.73	50.0	50.0
Set guidelines on how key operations are to be carried out	3.60	.63	2.00	4.00	50.0	40.0
Places emphasis on meeting clients satisfaction	2.70	.58	1.84	3.35	50.0	40.0
Government policy has encouraged the industry	3.30	.65	2.05	4.22	50.0	50.0

to make profit						
Structure enable to build a strong product/brand image	3.40	.60	1.89	3.60	60.0	30.0
Invest in high visible projects with chances of high returns	2.80	.68	2.14	4.61	40.0	60.0

Table 1 shows the descriptive statistics of perception placed on dimensions of oil and gas marketing strategies. Many of the marketing strategy variables showed above average perceptions. However, some of the variables received slow average perception. This means that relatively low perception were placed on dimensions of organisation structure and investment in high visible projects, in addition to low perception placed on meeting clients satisfaction (mega marketing). In contemporary terms, it may be said that the concepts and principles of total quality management (TQM) and megamarketing have not been adequately emphasized in Nigeria's oil and gas industry. Often, Nigerian oil and gas clients complain about the poor quality of services rendered by oil and gas marketing companies, particularly with respect to follow-up and comprehension of oil and gas policy terms and conditions. According to (Median 1999; McColl-Kennedy and Fetter 1999), identification and satisfaction of oil and gas clients' needs and wants should be the emphasis of oil and gas marketing companies. These objectives are partly achievable through reasonable emphasis on the marketing-mix combinations of products, pricing, promotions, distribution, and megamarketing strategies, among others. The highest marketing strategy emphases were placed on "rapidly changing environment provide more opportunity, and speed in product/service development. In the Nigerian oil and gas industry, aggressive salesmanship activities are undertaken by oil and gas sales agents/representatives in order to win new clients/market. Also, price negotiations may be tailored towards what the prospective client can afford to pay.

Table 2: Reliability Coefficients of Research Measures (Cronbach's Alpha)

S/N	Variable Measure	Cronbach's Alpha Coefficients
1	Management of Marketing strategy	0.76
2	Oil and Gas Performance Measurement	0.73
3	Effect of Environmental factors on marketing strategies	0.65
4	Organizational structure and strategies	0.84

Table 2 above shows Cronbach's alpha coefficients of the major research measures. "Management of marketing strategy constructs" and "Oil and gas performance measurements" met Nunnally's (1978) internal consistency (reliability) standard for newly-developed research measures, while "Effect of environmental factors on marketing strategies" failed to meet Nunnally's (1978) standard for reliability. Specifically, Nunnally (1978) recommended 0.70 Cronbach alpha value (internal consistency) for newly developed research instruments. Therefore, subject to the specific and usual limitations associated with this type of research, the research instrument appears reliable and valid.

This study has provided empirical evidence pertaining to the perception placed on oil and gas marketing strategies, and oil and gas performance measures and impact of environmental factors on such

strategies. The research findings show that product and mega marketing strategies received relatively low perception. These findings have managerial and research implications.

Table 3: Descriptive Statistics of Effectiveness of Strategic Marketing Using Qualitative Measures of Performance (n= 286)

Variables	Mean	Std. Dev.	Variance	Skewness
Company makes profit by selling large quantities of goods/services	5.17	.96	.89	-.127
Experience to cut costs is an important goal	4.67	.99	.99	-.79
Sales executive move faster than competitors in responding to customers needs	4.93	.98	.87	-.99
Develops an exhaustive set of alternatives before making improvement management decision	4.79	.89	.79	-.69
Demands better services provided by customers	4.17	1.23	1.29	-.39
Emphasize opening up new branches	4.69	1.23	1.27	-.32
Ability to gain market share is high	3.57	1.39	1.79	-.34

Table 3 presents the descriptive statistics of the effectiveness of strategic marketing practices of the studied oil and gas industry. The finding shows that strategic marketing practices have been reasonably effective in oil and gas industry, with strategic marketing effectiveness being very high from the analysis above. The essence of strategic marketing is to achieve set objectives, and these objectives can be measured in terms of profit, market share, marketing cost, gross earnings, capital employed, asset quality, quality of marketing management, liquidity, turnover of marketing staff, and management of departmental crisis. The effectiveness of strategic marketing practices in the studied oil and gas industry is encouraging. These are the CAMEL measures of performance. According to (Umoh 1992; McDonald 1996), the effectiveness of oil and gas strategies determines the survival and growth of downstream sector in Nigeria, especially in an ever-changing environment. Effective oil and gas management through strategic marketing assists in the employment of capital raised, and manages the oil and gas asset portfolio in viable business options so that the assets are seen to be performing and yielding returns. The marketing strategies of oil and gas, in order to show reasonable levels of effectiveness along the CAMEL measures, have to emphasize a marketing management team with foresight, experience, and commitment towards the survival and growth of the oil industry, among others. Oluyemi (1996), posit that the most widely accepted measure of performance of oil and gas industry is current profitability, which is measured in terms of return on assets and return on equity. Nigerian oil and gas industry that creates comparatively large amounts of value (in relation to its equity) through it

strategic marketing practices can be said to show high level of effectiveness. And as Table 3 shows, the studied oil and gas industry's have shown appreciable levels of effectiveness using the identified measures of performance.

Table 4: Comparison of Environmental Characteristic ^a

Dimension of the Environment	Company A Total Mean	Company B Oando Mean	Company C Texaco mean	Company D Agip Mean
Markets				
Product diversity	4.64	4.29***	3.22	3.12
Geographical diversity	5.40	4.22***	2.34	3.21
Level of product information	4.89	4.80	4.33	4.02
Diversity of promotional media	4.92	4.46*	4.06	3.42
Competition				
Intensity of rivalry	5.69	5.36**	4.34	4.54
Inability to influence market conditions	4.21	3.60***	3.34	3.18
Average profitability of the principal market	4.32	4.26	4.21	4.65
Entry barriers to the principal market	4.69	5.42***	4.32	4.24
Constraints imposed by inter-industry relationships with major stockholders	2.84	3.09	3.33	3.24
With major distributors and customers	2.76	3.78***	3.43	3.11
With major suppliers-subcontractors	2.49	3.71***	3.34	3.54
With government	4.38	3.27***	3.12	3.43
With competitors	2.14	2.64***	2.42	2.56
Ability of labour market				
For managers	3.64	1.79***	3.11	3.23
For technological experts	3.47	1.99***	2.23	2.65

Notes: ^a. The higher the mean score, the more typical is the characteristics

* Significant at 0.5 level by t-test of means

** Significant at 0.1 level by t-test of means

*** Significant at .001 level by t-test of means

From the above table, there is also a significant difference in labour market-ability between the four companies. Total firms face a less mobile labour market than oando, Texaco and Agip firms. Not new, the findings is consistent with the prevalent view that the Total labour market is less mobile because of its many tangible incentives incorporated into their employment system. The strengths and range of constraints imposed by interrelationships with other organizations are also different in Total and other oil and gas companies under study. Oando and other oil and gas firms face stronger constraints imposed by government and regulatory bodies, while Total firms feel the constraints imposed by their relationships with distributors, customers, suppliers and competitors to a greater degree than Oando, Texaco and Agip firms. This result suggests that Total companies create closer inter-organizational networks with various kinds of organizations. The networks, although constraining decisions within organizations, may have a number of benefits including risk-sharing and long term stabilization of business. The strong constraints imposed by the government upon oil and gas companies probably stem from the relatively adverse historical relationship between business and government in Nigeria as well as from motives to protect the public and promote competition.

To sum up, Total firms face a less diverse, less competitive, more volatile and high opportunity environment, and less mobility of market. They are, moreover, constrained by interrelationships with other organizations to a greater extent than the other oil and gas marketing firms under study. A firm must set operational objectives, the priorities of which are contingent upon the opportunities provided and constraints imposed by its environment matched against the internal capabilities of the organization.

HYPOTHESES TESTING

HYPOTHESIS 1

The first hypothesis tested in the study states that ' The organizational structure and strategies adopted do not affect the market share of Nigerian oil and gas marketing companies

Table 5: Mean and Standard Deviation on Company's Structure and Strategies Adopted and Market share Attained by Nigerian Oil and Gas Marketing Companies

Questions	Freq.	Mean	Standard Deviation
Company's structure and strategies adopted by Total firm	286	70.40	2.18
Company's structure and strategies adopted by Oando firm	286	68.40	1.18
Company's structure and strategies adopted by Texaco firm	286	42.64	1.22
Company's structure and strategies adopted by Agip firm	286	68.20	0.22

Oil and gas companies performance	286	64.40	1.16
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Table 5 above shows the difference between means of company's structure and strategies and resultant market share of Nigerian oil and gas marketing companies. Total firm with a mean of 70.40 and standard deviation of 2.18 had a better structure compared with other counterparts in the industry with mean of 68.40 and standard deviation of 1.18 respectively. The Table also shows that with the mean of 64.40 and standard deviation of 1.16 when divided between the companies, the market share of Total was better than that of the other counterparts. The question then is, was the difference significant enough or was it the result of a sampling error? The answer is presented in Table 6.

Table 6: Summary of Analysis of Variance on Company's Structure and Strategies Adopted and Market share Attained by Nigerian Oil and Gas Marketing Companies Respectively

Source	Type III Sum of squares	Df	Mean square	F	Sig.
Corrected Model	294.808	9	32.644	35.415	.000
Intercept	1887.508	1	1887.508	1749.596	.000
Company Types	20.014	1	5.654	6.240*	.000
Company's structure & strategies	22.757	4	5.684	6.231	.000
Company Types* Company's structure & strategies	24.745	4	5.086	5.457	.001
Error	581.174	283	.816		
Total	5758.000	285			
Corrected Total	667.984	286			

Source: Field Survey, 2007.

$R^2 = .382$ (Adjusted $R^2 = .361$)* significant at 0.005 two tailed test.

The findings in Table 6 indicate that there was a significant difference in performance at $f(4, 285) = 5.457$, at 0.05 significant level. This implied that the first hypothesis was rejected and the alternative hypothesis retained, which meant that the company's structure and the strategies adopted by Total yielded a better market share than that of their counterparts in the industry.

HYPOTHESIS 2

Marketing mix strategy, diversification and concentration adopted do not yield better performance of Nigerian oil and gas marketing companies.

Table 7: Mean and Standard Deviation on the Use of Marketing Mix Strategy, Diversification and Concentration of Nigerian Oil and Gas Marketing Companies Respectively

Questions	Freq.	Mean	Standard Deviation
Marketing mix elements adopted by Total firm	286	52.64	1.74
Marketing mix elements adopted by Oando firms	286	30.49	1.24
Marketing mix elements adopted by Texaco firm	286	23.34	1.20
Marketing mix elements adopted by Agip firm	286	20.28	1.13
Rate of diversification and concentration of marketing activities	286	45.30	1.52

Source: Field Survey, 2007.

Table 7 above shows the difference between means of diversification and concentration of marketing activities and the resultant performance of Nigerian oil and gas marketing companies in terms of the marketing mix elements employed. Total with a mean of 45.30 and standard deviation of 1.52 earned higher diversification on marketing activities with respect to the four elements of marketing mix than its counterparts when divided. Total’s performance with the mean of 52.64 and standard deviation of 1.74 was also better. The question then is, was the difference significant enough or was it the result of a sampling error? The answer is presented in Table 8.

Table 8: Summary of Analysis of Variance on the Adoption of Marketing Mix Strategy, Diversification and Concentration of Marketing Activities on Oil and Gas Companies Respectively

Source	Type III Sum of squares	Df	Mean square	F	Sig.
Corrected Model	231.872	9	25.765	25.764	.000
Intercept	2469.746	1	2469.746	2469.626	.000
Company Types	3.724	1	3.724	3.742	.087
4Ps of marketing mix	26.264	4	5.110	5.142	.000
Company Types* 4Ps of marketing mix	9.101	4	1.666	1.676	.026
Error	423.207	283	.884		
Total	6347.000	285			
Corrected Total	588.002	286			

^a R squared =.350 (Adjusted R squared=.247)* significant at 0.05 two tailed test

Source: Field survey, 2007.

Table 8 above shows that the competitive use of marketing mix elements by oil and gas marketing companies culminated in significant difference in diversification and concentration of marketing activities at $f(4,285) = 5.142$, at 0.05 significant level. The fact that these companies are significantly different in operation equally contributed to a significant difference in their diversification and concentration of marketing activities at $f(1,285) = 3.742$, at 0.05 significant level. The testing of the

second hypothesis which combined the two variables together that the oil and gas marketing companies' use of the elements of marketing mix relative to their diversification and concentration of marketing activities yielded higher returns. The findings indicated that the second hypothesis was rejected and the alternative hypothesis retained, which meant that the use of marketing mix elements yielded higher returns for the oil and gas marketing companies respectively.

SUMMARY OF EMPIRICAL FINDINGS

(a) The result from the testing of Hypothesis 1 revealed a significant difference in performance at $f(4,285) = 5.457$, at 0.05 significant level. The result of ANOVA revealed that a positive relationship exists between organizational structure and strategies adopted and the performance of Nigerian oil and gas marketing companies. Thus, null hypothesis one was rejected.

(b) The result from the testing of Hypothesis 2 revealed that there is a significant difference in performance at $f(4,285)=5.142$, at 0.05 significant level. Thus, the null hypothesis two was rejected.

DISCUSSION OF FINDINGS

As stated earlier, the discussion of this study followed the hypotheses raised and tested and they are presented below:

HYPOTHESIS 1

The organizational structure and strategies adopted do not affect the market share of Nigerian oil and gas marketing companies..

The null hypothesis one which stated that "the organizational structure and strategies adopted do not affect the market share of Nigerian oil and gas marketing companies" was rejected. This implied that the organizational structure and strategies adopted by oil and gas marketing companies affect market share positively. Several empirical studies have concluded that an organizational structure and strategies adopted is indeed an important element in companies' success. (Barney 1991; Kinnear and Taylor 1993 ; Levie 2006), gave evidence that the level of organizational structure and strategies is positively related to company effectiveness, while (Hitt, Keats, and Demarie 1998 ; Grewal and Tansuhaj 2001 ; Finney et al 2005) reported that more successful companies have well defined organizational structures, in sharp contrast to less successful companies. Focusing on large firms, (Takeuchi and Quelch 1993); found a positive relationship between the unstructured organizational patterns and large firm financial performance. The findings by (Pelham and Wilson 1995; Baker 1995; Atkin and Skinner 1995 ; Majaro 1997; Borden 1993) underscore this finding, as they established that changes in the market environment, business strategy and organizational structure have impact on companies performance.

HYPOTHESIS 2

The null hypothesis two which stated that "the marketing mix strategy , diversification and concentration of marketing activities does not yield higher rate of performance was rejected. This implies that the oil and gas marketing companies use of the elements of the marketing mix and

diversification of marketing activities yield higher rate of performance. The earlier studies reported reasons to support this finding; the asymmetries in resource endowments across national boundaries were some of the reasons why oil and gas marketing companies use elements of marketing mix and diversification of marketing activities would yield more returns (McDonald 1992 ; Zeithmal 2000; Rindfleisch and Moorman 2003 ; Roehrich 2004 and Best 2005). Firms operating in foreign markets face disadvantages viz- a viz other competitors, such as the latter's greater familiarity with local conditions, political and exchange risks and the travel and communication costs incurred in conducting international business (Day 1994 ; Johnson et al 2003 ; Knorr and Mahoney 2005; Lazonick and Prencipe 2005; Cert et al 2006).

CONCLUSIONS

This section elaborates on the conclusion of the research. Based on the findings of this research, the following conclusions are warranted:

1. The evidence from findings suggested that oil and gas marketing companies have comparative advantages in adopting various marketing strategies using different technologies. Oil and gas marketing companies appeared to specialize in the use of traditional methods of marketing, which is based on "soft" information culled from close contacts by marketing and sales department rather than the use of the specialized strategic marketing methods that are based on "hard" quantitative information.
2. Most of the findings of the research are consistent with previous normative and empirical works. For instance, the companies face a less diverse, less competitive, more volatile and high opportunity environment, and a less mobility of market. They are however, constrained by interrelationships with other organizations to a greater extent.
3. The research instrument shows high validity and reliability.
4. This study has provided empirical evidence pertaining to the perception of oil and gas marketing strategies, and the industry environmental factors on such strategies..

MANAGERIAL AND RESEARCH IMPLICATIONS

The findings of this study have several managerial implications for Nigerian downstream oil and gas. First, Nigerian oil and gas managers are advised to place more emphasis on the adoption of various marketing strategies using different technologies. Second, all organizations face an external business environment that constantly changes. Changes in the business environment create both opportunities and threats to an organization's strategic development, and the organization cannot risk remaining static. It must monitor its environment continually in order to: build the business, develop strategic capabilities that move the organization forward, improve the ways in which it creates products/services and develops new and existing markets with a view to offering its customers better services.

Third, anticipating competitors' actions and reactions to the organizational' moves may be the key determinant of success for any marketing strategy. Fourth, with the competitive downstream oil and gas industry of today, participants can put more emphasis on relationship marketing to ensure effectiveness. This essentially entails personalizing the oil and gas services offered to clients, attending to clients' cultural and social activities, in relation to other non- business activities, which are of interest to clients.

Fifth, Nigerian oil and gas marketers should be sensitized to the importance of their offerings to their clients, including the impressions their clients have of those offerings. As oil and gas clients are demanding more quality from their petroleum product marketing companies (PPMC), it may be strategic to inject the idea of total quality management (TQM) and its variants among product marketers. Sixth, Nigerian oil and gas industry are well advised to consider the principles and concepts of synergy in their product service marketing. This may entail considering the implications of any marketing strategy decisions on the other organic business functions. Nigerian corporate marketing executives should make their marketing companies learning organizations. In such learning organizations, oil and gas marketing companies staff would always be inquiring into the total or systemic impacts of their business behaviours, instead of just concentrating on the local effects of their business behaviours (Chen 2004).

Effective downstream oil and gas marketing strategies in Nigeria may hinge on an intelligent understanding of beneficial marketing strategies, the relevant environmental factors that assist or hinder the efficacy of marketing strategies, and how marketing strategies and environmental factor singly or wholly determine product marketing companies' performance. Despite the satisfactory performance of Nigerian oil and gas marketing companies with their marketing strategies, as reported in this research, Nigerian oil and gas marketing managers are advised to undertake extensive marketing research and SWOT analysis. Instability of regimes and policies, and variations in other environmental factors can still pose challenges to product marketing companies' in Nigeria. It should be noted by Nigerian oil and gas marketing companies' managers that participants' reputation and good image, staff politeness and kindness, in addition to the managerial ability of corporate product marketing managers are the salient factors implicated in oil and gas marketing companies' efficiency and effectiveness (Chen 2004).

RECOMMEDATIONS, LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDIES

This study indicates that strategic marketing practices have a significant impact on performance variables and that they interact with the different components to facilitate performance. It also indicates that different performance factors moderate strategic marketing practice. Therefore, organizations hoping to enhance corporate performance in a dynamic business environment should consider the following:

RECOMMEDATIONS

- a) The concepts and principles of total quality management (TQM) are recommended for holistic study, in addition to contemporary marketing management issues such as relationship marketing, value analysis, business process re-engineering, megamarketing, re-marketing, co-marketing, bench marketing, and permission marketing, among others.
- b) Efforts should be made by organizational marketers to understand the relevant factors that affect both clients' behaviours, and the strategic options to be adopted to cope with such behaviours.
- c) Oil and gas marketing scholars or researchers should endeavour to study holistically the relevant business functions and activities which may enhance or hinder the understanding and subsequently applicability of relevant modern management concepts and principles to oil services marketing.

- d) Firms that are not operating in a dynamic business environment need not adopt a strategic marketing practice as this may cause the firm to look inconsistent in the eyes of its customers and eventually reduce effective performance.
- e) The need for the identification of options and resources and of capabilities of deployment constitutes an impetus to effective strategic marketing implementation, since the practice derives from capabilities in assembling and maintaining an appropriate resource portfolio and coupling the resource portfolio with the identification and recognition of options.

SUGGESTIONS FOR FURTHER STUDIES

This research leads to some observations that might be of interest to future researchers, as they represent the seeds from which future research can be developed.

- a) This same research can be carried out in other nations so that a broad comparison of the concepts of strategic marketing as it affects firm performance can be made.
- b) Research into the combined effects of strategic marketing practice and performance factors as mediators of firm performance relationship.
- c) Research into the effects of key characteristics of industries environmental indices and marketing strategy could be carried out to further explain the differences in the firm's adoption of strategic marketing.
- d) Finally, future research works are to be undertaken in order to refine the cobwebs found in the present research, and orient it to more specific contexts (business, time, location, etc) in Nigeria's oil and gas industry.

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HUMAN RESOURCE SYSTEMS AND ORGANIZATIONAL EFFECTIVENESS: THE CASE OF INDIAN RURAL BANKING

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ABSTRACT

The contribution of Human Resource Systems to the overall health and its effectiveness as an area of research has assumed great significance in view of the gearing up of the Indian economy to ensure its global placement. The role of banking in general and the rural banking in particular towards this end is significantly critical in the Indian context. The present study has been undertaken with this perspective in view. Research literature in the area has universally reported a significant relationship between core HRM practices and organizational success. (Becker and Gerhart, 1996; Michie, J. and Sheehan, M., 2005; Shari L. Peterson, 2008). Also, Human Resource Management acquires a special meaning in banking

industry in India, for reasons such as: the banking being a labour intensive industry, the labour turnover being less and the job security being high. Besides, the task of Human Resource Management is seen as central since the quality of banking and the service delivery is essentially a function of the quality of people involved in management of systems, practices and procedures in these organizations.

The present case Study is focused on The Jammu Rural Bank and the rural branches of State Bank of India, in Jammu and Kashmir State, India. The work seeks to examine the relationship between Human Resource Systems and Organizational Effectiveness and also undertake a comparative analysis amongst the Banks under study. The study is based on the assumption that focus on Human Resource Systems in rural banks is inadequate and the increased emphasis on these systems could contribute to enhanced productivity levels of rural banks.

As mentioned earlier, the Study has been undertaken in the two banks by administering two different sets of structured questionnaires on Human Resource System Models and Organizational Effectiveness. The questionnaire on Human Resource Systems Model includes 44 statements and Organizational Effectiveness Questionnaire, includes 12 items designed on Likert Scale with Reliability and Validity duly tested. The study surveyed 310 respondents from all the four cadres of both the banks. Stratified Random and Purposive sampling technique have been used to make the sample representative. Quantitative Techniques like factor analysis, correlation and regression have been applied to statistically analyze the data.

The analysis of the data collected develops a perfect fit model between Human Resource Systems and Organizational Effectiveness. The study reveals inadequate Human Resource Practices and consequently the low degree of Organizational Effectiveness in the rural branches of the State Bank India. Also, the study reports that the Human Resource Systems are not that developed in Jammu Rural Bank as compared to the State Bank of India. The current empirical research is an attempt to put forth the Human Resource Systems- Organizational Effectiveness interface as a case study of rural banking sector in India.

KEYWORDS

Human Resource Systems, Organizational Effectiveness, Banking, Rural banks

INTRODUCTION

Human Resource Systems have assumed considerable importance in recent years in the wake of globally competitive scenario. Each firm is seeking to transform into a globally adaptive organization by instilling flexibility, efficiency, altruism and transparency into its globally networked talents, processes and partnerships. The Human Resource organization is confronted with a responsibility to integrate, anticipate and build a futuristic organization. In this regard, Human Resource Systems Management has to proactively seek to build corporate wide initiatives that transcend borders and nationalities. The management initiatives that organizations are taking in response to the change are bringing people squarely centre stage. New configurations of the organizations that are emerging, share one common objective: "make the best possible use not only of technology, systems or capital, but also of human resources." The transition from traditional human resource management to new peoples' management calls for a new and crucial responsibility of identifying the organizational and individual capabilities.

There is a need for greater involvement and participation of people in decision making, decentralization and delegation of power.

The success of the organizations in modern competitive world depends on the strategy they adopt, create or regenerate. The organizations should recognize human resource as a new source of core competence and manage it strategically for achieving competitive advantage. In the current competitive business environment, the need of the organizations is to adapt an integrated model of Human Resource Systems for thriving on the cutting edge competition.

Human resource management is a subsystem of organizational system, linked to the overall management patterns of the organization. It implies that Human resource systems cannot be a stand alone process, but it must be derived from the corporate strategy of the organization. In fact, the effectiveness of Human resource systems Management depends on how it is linked to the corporate strategy and how its internal processes are carried on.

REVIEW OF LITERATURE

The concept of Human resource systems assumes that human beings are the most valuable asset to the organisation and their contribution has to be seen as cardinal to the successful achievement of organizational objectives. This positive view of people working in the organization, as an asset with unlimited potential, is the core concept of Human resource systems.

Different perspectives exist in a bid to portray Human resource systems in respective frames of reference. According to Beer et. al. (1984) human resource management functions include human resource flow (into, through, and out of the organization), reward system, and work systems. Fomburn et. al. (1986) have divided human resource management functions into five categories- selection, performance, performance appraisal, rewards and development. Decenzo and Robbins (2004) have included staffing, training and development, motivation and maintenance in human resource management functions.

Also, human Resource management systems of different countries may change and become more similar or even converge towards same model (Rowley et. al., 2004, Boxall and Purcell, 2003). Besides, as Irene Honfun Poon (2007) comments that: "small change can bring in an incremental change in organizational effectiveness", thus suggesting a possible linkage between human resource systems and the organizational effectiveness. Paul D. Hamerman and Zach Thomas (2008) have shown that HRM will be a key focus in 2009 as organizations have to develop strategies to cope with the economic crisis and recovery.

Stephen P. Robbins, 2010 have mentioned that the addition of HR's strategic component changed the way practitioners think about the field in a way not unlike how Herzberg's two-factor theory changed the way researchers and managers think about motivation. While some criticisms question the validity of his findings, the framework described in his theory is relevant when considering the two components of HR.

This shift indicates an important change in the way HR contributes to the achievement of an organization's objectives (Evan,2010). And yet responsibility for the older, functional aspects of HR still resides within the field, intertwining two components with considerable differences. While the functional component focuses on providing services of a set quality and scope at the lowest cost, the

strategic component seeks to provide unique organizational consultative services that differentiate the firm from its competitors in the marketplace.

In this dynamic environment, human resource managers have recognised the need to act as business partners to line leaders (Galbraith, 1992, Ulrich et al., 1994, Martell & Carroll, 1995, Conner & Ulrich, 1996). Kessler (1995) suggests complete human resource transformation to attain organizational effectiveness. Similarly, more recent theoretical work highlights the crucial role human resource management might play in augmenting organizational performance. According to the resource-based view, firms can only build up and maintain competitive advantage when they are able to create it in a way which is demanding for competitors to imitate. Compared to traditional sources of competitive advantage like, for example, natural resources, technology or economies of scale, complex social structures such as an employment system are more difficult to imitate and might hence be a key source for creating competitive advantage (Becker and Gerhart, 1996; Miner and Mezas, 1996; Kaplan and Norton, 1992; Meneguzzo, 2000; Stefan Kuntz, 2007).

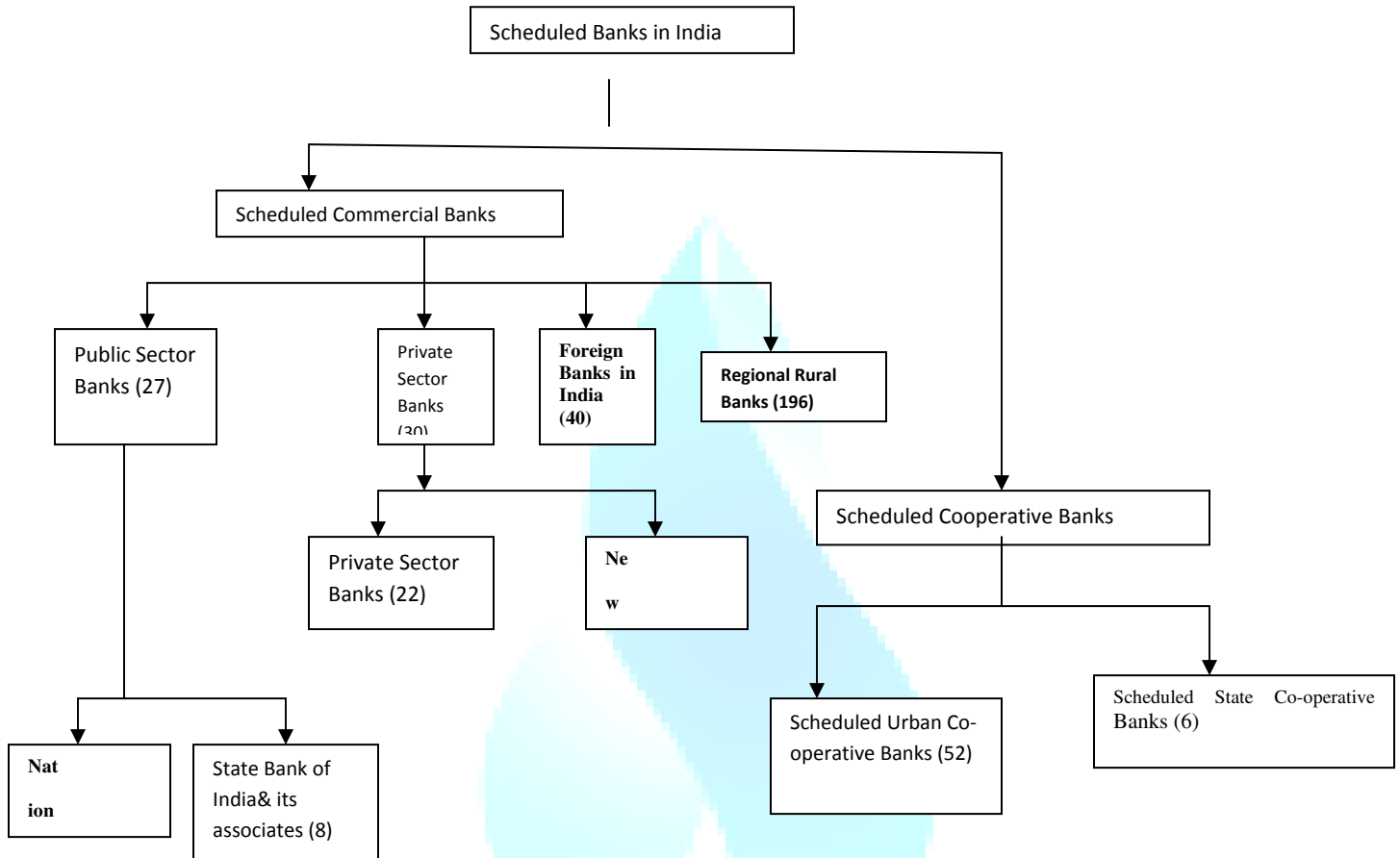
The importance of application of human resource systems as a competitive advantage for attaining organizational effectiveness can be seen in the service sector. Yattoo N.A. (2000) in his study entitled "Executive Development in Banking Industry" highlighted need for high degree of expertise, professional competence, managerial excellence and involvement of staff at all levels. He has studied the various programmes, policies and procedures adopted by Banking Industry in general and State Bank of India in particular in developing its executives who share major burden of responsibilities for framing of various policies regarding human resource systems and their implementation. According to Yattoo (2000) human resource practitioners should develop in bank employees the attitude of selfless dedication to work and quest for new knowledge as it is necessary to understand the basic concept of 'Human Resource System'.

Global considerations and cross cultural concerns have become one of the most important areas in Human resource management (Lip man- Blumen, 2004, Keller man, 2004, Terry Price, 2005, Rohmetra, 2005). Cost, quality of products and services and the logistics of operations have a significant impact on the competitiveness. In a country like India, especially in the rural areas human resource management can be seen as the central subsystem of management of various resources and human resources as the most valuable assets and the active force in the process of development. The contribution of human resource system is all the more huge in the services sector in India, which constitutes major chunk of employed population. In service industry like banking, the manpower is the key input and accordingly serious focus has been given towards their development and management so as to enable the existing banking system to successfully meet the challenges in the coming years (Sharma & Rajpurohit, 1993).

India is the largest country in South Asia with a huge financial system characterized by many and varied financial institutions and instruments. The Indian financial sector was well developed even prior to the political independence of the country in 1947. The vastness of the Indian Banking system could be gauged as presented in Figure 1

Human resource systems management acquires special meaning in the Indian Banking Industry due to a variety of factors including banking being labor intensive with low labour turnover and as high job security. Besides, the quality of services so as to achieve the socio economic goals in Indian Banking is highly dependent on the employees who deliver these services. Clearly, effectiveness in banking involves the total involvement of the employees in the process of rendering services. Thus, the task of human resource management shall always be central and any neglect of human resource practices could invite risk of losing on productivity indices. (Rohmetra, 2004-05)

Figure 1: Banking Structure in India



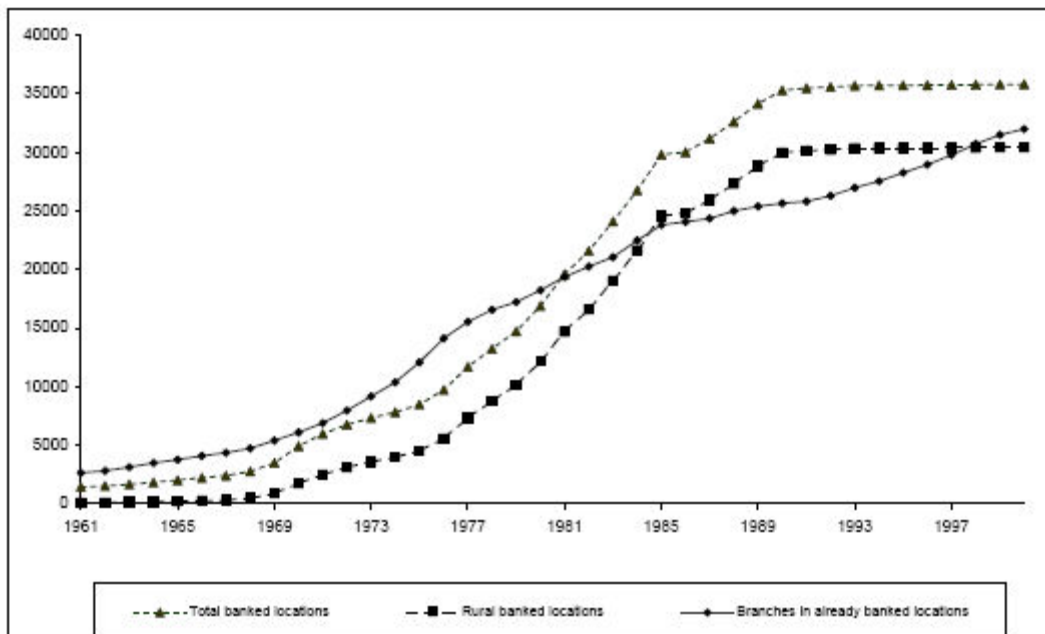
(As indicated in the second schedule of RBI Act., 1934)

Note: Figure in Brackets indicate number of banks in each group.

Source: Report on Trend and Progress of Banking in India, 2005-06, RBI, Mumbai: (2007)

Thus, as Amol Maheshwari and Shweta Jhajharia (2001) put: “Since the objective of the banks in the competitive scenario is to attract, retain and expand the customer base, it becomes imperative for banks to revamp and revitalise the entire organisation culture. The change in image needs to be driven internally through the structure, culture, support systems and people within the organization”. In this competitive world, the customer takes into account the relative efficiency while choosing a particular bank. This clearly shows that the main focus is organizational efficiency. Further, efficiency being the main focus, the banks can leverage their strengths and competencies by implementing Human resource systems (www.vyapaarasia.com/India/banks.asp)

Figure 2: Growth of Bank Branches in India



Note: All variables refer to the cumulative number of branches (of that type). These variables are constructed using information from the Reserve Bank of India. Basic Statistical Returns as provided in the “Directory of Commercial Bank offices in India, (Vol. I)”

Further, Indian banking sector has emerged from a sluggish business entity to a proactive institution and is now forging ahead dramatically (RNCOS, 2008). The Indian Banking Sector which indeed is different from the banking sectors of other countries in many respects, because of the country’s social, economic and geographical characteristics, is currently driven by factors including industry credit, NPA, housing finance, and bankable households. Encouragingly, it is estimated that the Indian Banking Sector is expected to grow at a CAGR of around 23.3% by 2011 (RNCOS, 2008).

However, as compared to the overall banking growth in urban sector in India, the rural banking sector is still under-penetrated in the country. The development in the field of rural banking sector is lagging behind when compared with the development of urban banking sector. Thus, there is a need for providing a boost to the rural banking sector in India having huge potential that can add-on to the growth of the overall Indian banking sector.

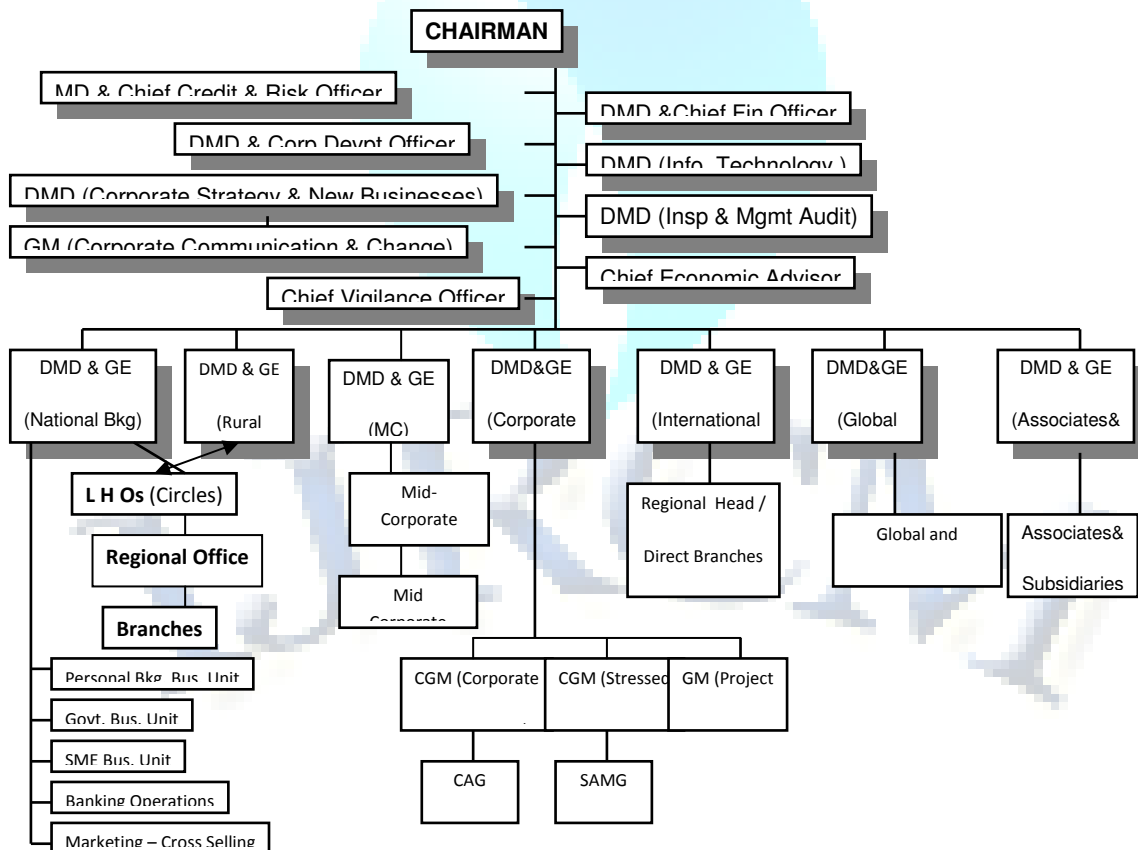
Justification of the study:

The development of Indian economy cannot be achieved without bringing about required socio economic transformation in the rural areas. Rural development has therefore been a priority area in the planned efforts of India right from the inception of planning machinery. The development of India has been found to be seriously inhibited by the non availability of adequate and timely finances. In order to overcome this infirmity in rural transformation, the banks were required to spread their network in the rural areas to make available institutional credit to the farmers, village artisans and other rural weaker sections. The present study therefore confines to two such financial institutions which are involved in the economic transformation of rural areas. The importance of human resource systems in any organization can be seen from the Review of Literature. The studies show that the human resources are

responsible for playing an effective role in the task of socioeconomic transformation and development of the weaker sections of the society. Human resource systems in the rural banking sector calls for developing the organizational culture (Rao, 1996) in a way that would help in achieving the economic development of the rural masses and the rural sector as a whole. The Present study is quiet vast as it deals with all the aspects of human resource systems and relates it to the organizational effectiveness in the Banks under study.

Thus, in view of the gearing up of the Indian economy to ensure its global placement, the contribution of human resource systems to the overall health and organisational effectiveness, as an area of research has assumed great significance. The role of banking in general and the rural banking in particular towards this end is significantly critical in the Indian context. The present study has been undertaken in this backdrop. Besides, research literature in the area has universally reported a significant relationship between core HRM practices and organizational success. (Becker and Gerhart, 1996; Michie, J. and Sheehan, M., 2005; Shari L. Peterson, 2008). Hence, the need for promotion of Indian rural banking sector, as also the thesis to explore the relation between human resource systems and organisation effectiveness put forward a case in support of the present research. For the purpose of the present study two banks have been studied as a comparative case. These banks are State Bank of India (SBI) (Rural Branches) and Jammu Rural Bank (JRB). For the purpose of study all the branches of Jammu Rural Banks (No.90) and State Bank of India (Rural Branches in Jammu (No.65) have been surveyed.

Figure 3: Organisation Structure- State Bank of India (SBI)



Source: www. sbi.co.in

OBJECTIVES

The present study aims at identifying the various techniques of human resources systems models being employed in both the banks and its impact on organisational effectiveness in the rural areas. The broad objectives of the study are as under:

To study the extent to which the human resource practices have been implemented in the rural banks

To study the impact of human resource practices on organizational performance and effectiveness as seen along perceptual response across different levels and categories of personnel.

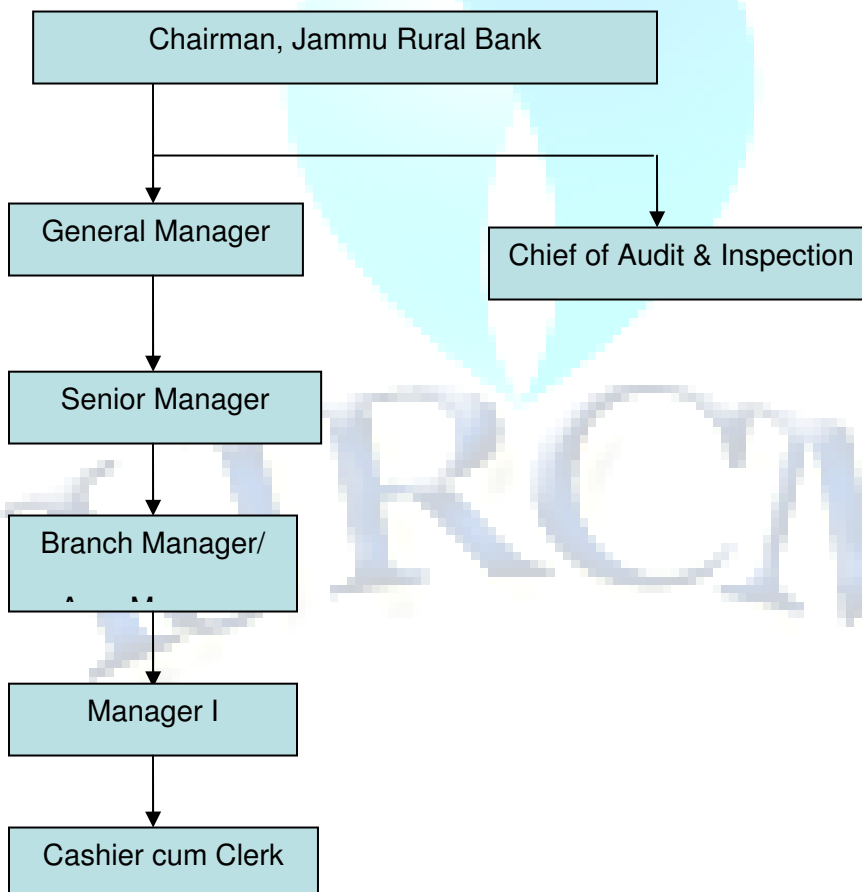
To undertake a comparative analysis amongst the Banks under study.

HYPOTHESIS

H₀: Human resource systems and organisational effectiveness are not related.

H₀: No variation exists in human resource systems application between the Banks.

Figure 4: Organisation Structure- Jammu Rural Bank (JRB)



RESEARCH METHODOLOGY

The study is conducted by collecting primary data to address the research objectives. The response of the employees from both the banks is obtained through two self designed different sets of questionnaires (Human resource systems Questionnaire (Cronbach's alpha- 0.948, KMO-.968), and Organizational Effectiveness Questionnaire (Cronbach's alpha-0.915, KMO-.905), which have been administered on the personnel of both the banks working as Senior Managers/ Branch Managers/ Area Managers, Manager II, Manager I or Cashier cum Clerk throughout the rural branches of Jammu province. The study surveyed 310 respondents from all the four cadres of both the banks.

The sample has been drawn by adopting stratified sampling and selecting the respondents randomly from each stratum. The sample was selected on proportional basis from the strata but the responses were nearly 50% of the population from three cadres and 100% from the Senior Manager level. Accordingly, about 50% of the respondents from Manager II level, Manager I level and Cashier cum Clerk level were taken randomly and for the Senior Manager level the coverage has been 100% for equitable representation. The bank personnel selected in both the banks are spread over all the areas of operation.

FINDINGS

The trends and the finding of the study have been presented in the tabular and graphical form on the basis of the response generated. The inferences have been drawn using mean score analysis, factor analysis, regression and the two way ANOVA. Further, hypotheses have been tested using t-test and f-test. Human resource systems across State Bank of India and Jammu Rural Bank have been studied along forty four dimensions (Table 1). The overall mean score for HRS at SBI has been worked out at 3.78 and for JRB at 2.84, suggesting that the respondents at SBI are more satisfied with human resource systems and practices as compared to JRB. A close scrutiny into the findings reveals the trends as follows:

The employees are very satisfied with the selection procedures at SBI, while the case is just the reverse with JRB. The major cause of dissatisfaction with respect to this can be attributed to the fact that there has been no recruitment in JRB since 1989.

Manpower planning as understood in terms of placement of right personnel at the right jobs, clarity in recruitment policy as well as selection processes is reported in place for SBI. However, the situation is not that favourable in case of JRB, wherein the respondents have registered utter dissatisfaction vis-à-vis all these areas.

Though in comparative terms the employees are better versed with their roles in the present position in case of SBI, as seen against the state at JRB, the findings suggest that the employees believe themselves to be technically and procedurally quite equipped to be able to handle their banking operations.

Interestingly, despite the overall satisfaction with Human resource systems at JRB reported at a lower level (2.84 mean score); the employees both at SBI and JRB believe their organizational culture to be collaborative and healthy. Employees in these organizations trust each other as colleagues and perform

as effective teams and communicate freely with their superiors and subordinates alike without any fear and/or inhibitions.

An important trend as revealed through findings states that training and development are not addressed adequately in JRB. Similarly, the performance appraisal systems also are inadequate raising further concern over the manner in which the issues of human resource development are being handled in JRB. The concern for human resource development through its sub systems as training and performance appraisal mechanisms is also not that satisfactory in SBI, though little better in comparative terms.

The findings as per the mean score analysis also report that value base along proactivity, collaboration, quality decision making, empowerment and autonomy are stronger in case of SBI as against JRB. Significantly however, these value patterns are also reported at a moderate level of desirability in SBI.

Besides, human resource audits exist at negligible level. Also, HRIS is also reported at extremely poor and below average levels both for JRB and SBI respectively.

The employees however feel quite attached to their organisations and believe that their work is interesting. They are also fairly contented with their decision to stay with these organisations.

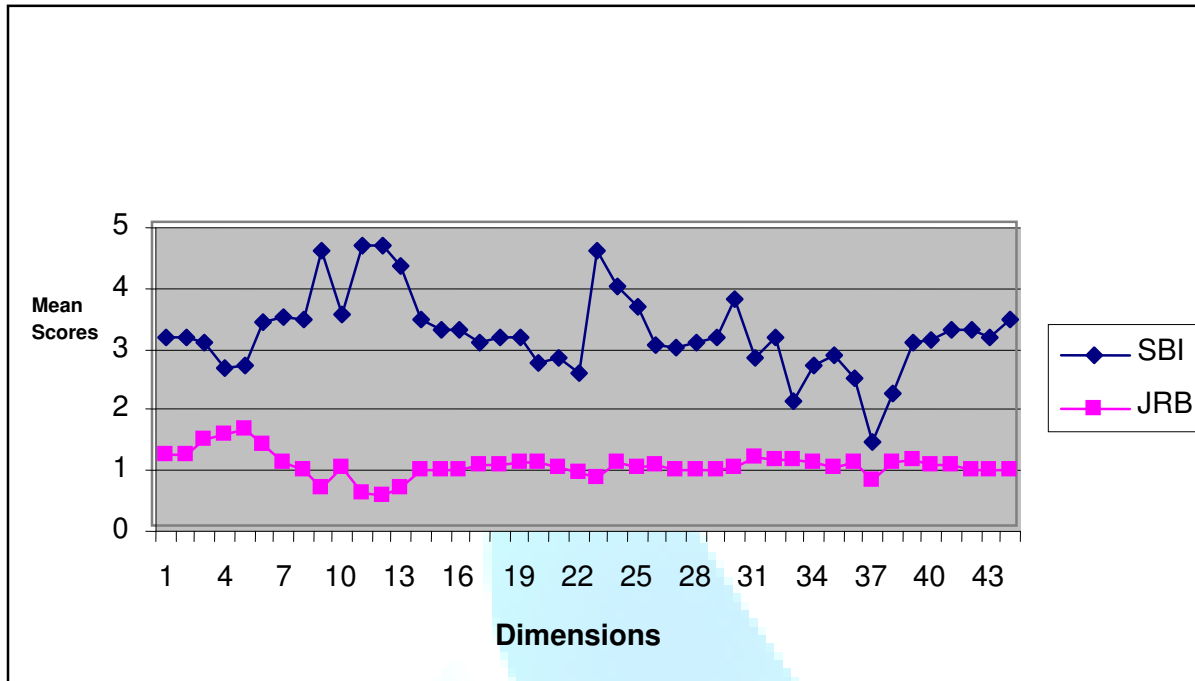
Table 1: Comparative position of SBI and JRB along Human Resource Systems Index

VARIABLES	SBI			JRB		
	Mean	Std Dev	Vari	Mean	Std Dev	Vari
Clear HRP Process	3.84	0.733	0.539	2.64	1.30	1.716
Right People at Right Job	4.00	0.778	0.606	2.52	1.21	1.46
Clear Recruitment Policy	4.20	0.775	0.601	2.21	1.34	1.819
Org .utilizes internal and external resources for recruitment	4.17	0.836	0.699	1.48	0.96	0.930
Satisfied with selection procedure	4.31	0.845	0.715	1.48	1.04	1.08
Employees well versed with their roles in present position	4.25	0.846	0.716	2.77	1.49	2.08
Clear vision about procedural formalities	4.07	0.764	0.585	3.08	1.19	1.42
Clear job description	3.97	0.739	0.547	3.12	1.07	1.16

Employees well equipped to handle loan cases	4.89	0.326	0.106	4.42	0.851	0.725
Mech. of increased upward & downward communication	4.08	0.585	0.343	3.16	1.13	1.28
Employees trust each other	4.89	0.312	0.098	4.58	0.778	0.606
Effective teams	4.84	0.36	0.130	4.6	0.728	0.530
Collaborative & Healthy Culture	4.55	0.566	0.321	4.2	0.88	0.779
Not afraid to express feelings with superiors	3.77	0.951	0.905	3.23	1.18	1.39
Not afraid to express feelings with subordinates	3.52	0.990	0.981	3.18	1.21	1.48
Self development needs	3.66	0.906	0.822	3.04	1.21	1.466
Happy with Training & Development policy	3.59	0.833	0.695	2.744	1.18	1.396
Implementation of Training	3.61	0.922	0.851	2.84	1.23	1.53
Update itself to the future need of the organization	3.6	0.85	0.727	2.8	1.22	1.51
PAS helps in understanding strengths and weaknesses	3.34	0.875	0.766	2.47	1.07	1.15
PMS provides a format of dialogue b/w sup. & subordinates	3.34	0.875	0.766	2.47	1.07	1.15
Results of PAS are fair	3.07	0.798	0.637	2.23	0.981	0.963
Set pay structure	4.81	0.547	0.300	4.41	1.12	1.26
Salaries competitive	4.62	0.618	0.383	3.5	1.24	1.50
Satisfied with benefits	4.33	0.596	0.355	3.14	1.06	1.14
Org carries out counseling and develops competencies	3.63	0.871	0.760	2.58	1.03	1.075
No difference between stated values and actual behaviour	3.63	0.836	0.700	2.56	0.931	0.867
Proactive approach	3.64	0.781	0.610	2.70	1.03	1.061
Autonomy in organization	3.78	0.860	0.741	2.75	0.890	0.794
Collaboration between team members	4.24	0.681	0.464	3.5	1.24	1.55

Emphasis on Quality decision Making	3.49	0.889	0.792	2.34	1.24	1.5
Conditions of work place are good	3.80	0.772	0.596	2.69	1.22	1.5
Quality Circles	2.86	1.02	1.04	1.54	0.938	0.883
Decision without consultation with seniors	3.44	0.928	0.862	2.14	0.934	0.873
Organisation empowers employees	3.48	0.881	0.77	2.38	0.975	0.951
Integration of IT with Human resource systems	3.28	0.920	0.847	1.91	0.945	0.894
Human Resource Audit System	1.60	0.858	0.736	1.31	0.834	0.696
Human Resource Information System and Decision Making	2.76	0.968	0.939	1.8	1.12	1.2
Efficient Leadership	3.31	1.00	1.00	2.91	1.29	1.68
Work Interesting and Challenging	3.4	0.95	0.903	2.94	1.20	1.44
Feeling of belongingness	3.5	0.93	0.871	3.05	1.22	1.500
Strong Sense of Attachment	3.60	0.849	0.722	3.09	1.14	1.31
Retained with same organization	3.57	0.870	0.757	2.87	1.05	1.11
Flexibility in Organisational Policy	3.833	0.867	0.753	3.19	1.09	1.19
Over all Mean Score	3.78			2.84		
	(%)			(%)		

Figure 5: Comparative position of SBI and JRB along Human Resource Systems Index



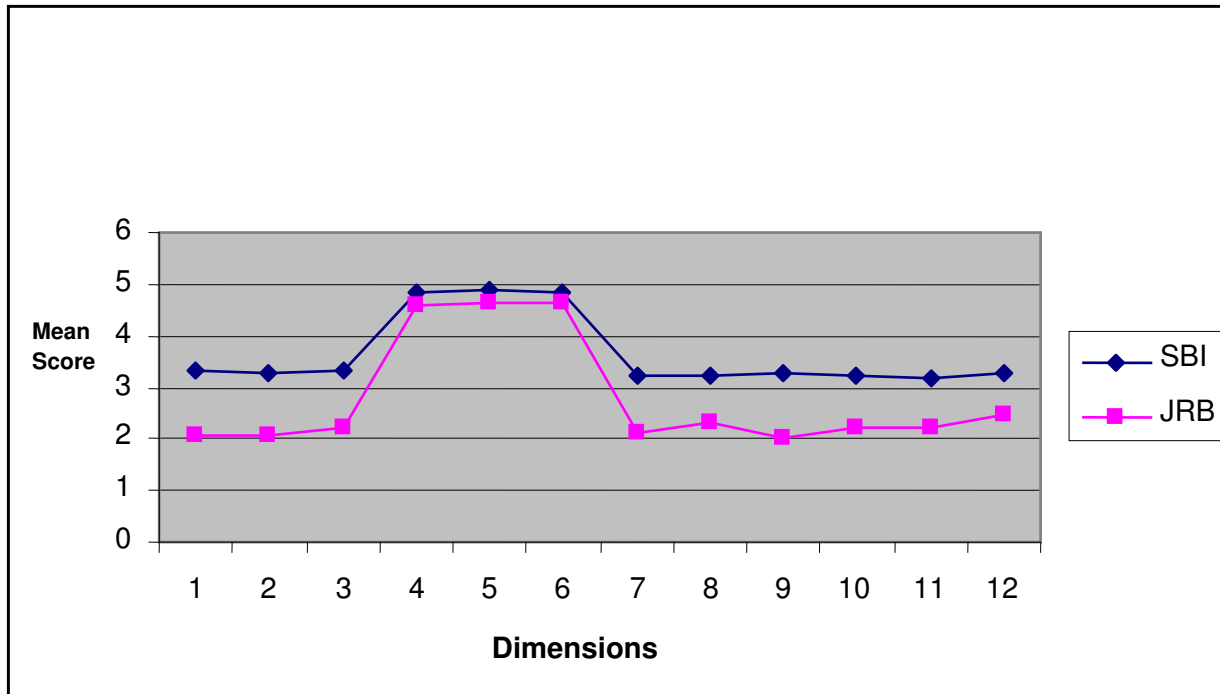
Organisational effectiveness has been measured along 12 dimensions, duly represented and listed in the form of statements (Table 2). These statements were duly responded to by the respondents and the overall organizational effectiveness index as perceived by the respondents has been worked out at 3.66 and 2.80 for SBI and JRB respectively. It may be apt to mention that the present research seeks to put forth the organizational effectiveness as a perceptual frame as visualized by the respondents/employees. Broadly, organizational effectiveness is seen as a function of HR Index and the Financial Index (Table 4). The HR Index primarily includes top management/senior support besides culture/environmental perspective. Similarly, the financial index constitutes issues which concern return on investment, profitability, goal attainment and the like. Interestingly, the mean score analysis reveals that employees/respondents in both the banks perceive their organizations financially effective, despite their human resource effectiveness index not that favourable. However, to reiterate, the SBI has registered its Human resource systems index at a higher level as compared to JRB as reported in the findings.

Table 2: Comparative position of SBI and JRB along Organisation Effectiveness Index

S. No.	Statement	SBI			JRB		
		Mean	S.D.	Variance	Mean	S.D.	Variance
1	Top Mgt cooperates with the staff	3.34	0.729	0.533	2.06	0.905	0.820

2	Seniors guide their juniors	3.26	0.686	0.472	2.09	0.77	0.604
3	Subordinate staff is given sufficient authority	3.34	0.699	0.489	2.23	0.813	0.662
4	Return on Investment has increased	4.83	0.561	0.315	4.59	0.655	0.430
5.	Increase in profitability Index	4.90	0.433	0.188	4.62	0.612	0.375
6.	Organisation acquires scarce and valued resources	4.86	0.515	0.266	4.62	0.632	0.400
7.	Top mgt goes out of its way to make sure that employees enjoy their work	3.21	0.722	0.522	2.10	0.757	0.574
8.	Employees are informal	3.21	0.739	0.547	2.33	0.823	0.678
9	HR is an important resource	3.27	0.790	0.624	2.04	0.877	0.770
10.	Right decision with regard to external environment	3.21	0.719	0.518	2.23	0.882	0.779
11	Work in the same organization	3.20	0.706	0.499	2.23	0.894	0.799
12	Individual goals attained	3.26	0.730	0.533	2.48	0.927	0.860
	Overall Mean	3.65 (%)			2.80 (%)		

Figure 6: Comparative position of SBI and JRB along Organisation Effectiveness Index



Results of the study have been further validated using Factor Analysis, Regression and ANOVA. Table 3 shows the results of Factor Analysis performed on the forty four Human resource systems variables using 16 version SPSS. Accordingly, human resource systems variables have been summarised into six factors as: Positive Work Culture (F1) which has contributed maximum i.e. 20.87% to the total Variance, Human Resource Planning, (Recruitment, Selection, Job Analysis) (F2), Leadership, Motivation and Attachment (F3), Performance Appraisal, Decision Making and Development (F4), Collaborative Culture (F5), and Communication and Compensation (F6). These factors determine the level of application of the human resource systems in the banks and explain 72.10% of the total variance (Hair, et, al, 1999).

Table 3: Factor Analysis for Human Resource Systems Analysis

S.No.	Factors (Human Resource Systems)	Mean	Variance Explained (%)	E.V
1	Positive Work Culture (F1)	2.845	20.87	6.47
2	Human Resource Planning (F2).	3.170	15.19	4.71
3	Leadership, Motivation & Attachment (F3)	3.271	13.82	4.28
4	Performance Appraisal ,Decision Making and Development (F4)	2.778	8.91	2.76
5	Collaborative Culture (F5)	4.671	7.23	2.24
6	Communication and Compensation (F6)	3.662	6.09	1.89

Total Variance Explained (%)	72.10
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Table 4 shows the results of factor analysis along Organizational Effectiveness index. Organizational Effectiveness Variables have been summarized into two factors, HR Index for Effectiveness (F1), Financial Index (F2) by applying SPSS 16 Version which explains 65.4% of the total Variance (Hair, et al, 1999).

Table 4: Factor Analysis for Organisation Effectiveness

S.No.	Factors(Organizational Effectiveness)	Mean	Variance Explained (%)	E.V
1.	HR Index for Effectiveness(F1)	2.66	42.404	5.089
2.	Financial Index(F2)	4.72	22.939	2.75
	Total Variance Explained (%)		65.4	

Table 5 shows the results of two - way ANOVA applied on human resource systems and organizational effectiveness factors of the Jammu Rural Bank and State Bank of India. The F value calculated for (HRS-OE) is greater than the P Value (0.2133) so that the null hypothesis that there is no effect of Human resource systems on Organizational Effectiveness is rejected. Also, the F value calculated for (JRB- SBI) is (844.7) which greater than the P Value (0.02). Thus, the null hypothesis that there is no difference between the Human resource systems and Organizational Effectiveness among the responses of employees from SBI and JRB is also rejected.

Table 5: ANOVA Results

	SS	Df	MS	F	P Value
(HRS-OE)	0.007921	1	0.007921	8.24	0.2133
(JRB-SBI)	0.811801	1	0.811	844.7	0.02
Error	0.0009	1	0.00096		

Further, human resource systems and organizational effectiveness are positively correlated. The Karl Pearson's Correlation has been calculated at $r = 0.828$. The results of Multiple Correlation show the independent nature of the factors of Human resource systems under consideration. The correlation is found significant at the 0.01 level (two tailed) (Table 6).

Multiple correlation between the factors of organizational effectiveness has been calculated at 0.265 sig. at 0.01 level. The results show that the factors are independent of each other and can be treated as independent variables.

One of the prime objectives of the present study has been to comprehend the relationship between HRS and OE. In view of this, Regression analysis has been applied. The Multiple R value is worked out at 0.828 which depicts a positive correlation between human resource systems and organizational effectiveness. The value of R^2 is 0.68 which explains 68% variation in the data. We assume linear relationship and the exponential values are taken. Thus, the existence of positive relationship between human resource systems and organizational effectiveness is further supported.

Table 6: Multiple correlation between the Factor Index of Human Resource Systems

	F1	f2	f3	f4	f5	f6
F1	1.000					
F2	.715**	1.000				
F3	.546**	.579**	1.000			
F4	.710**	.667**	.642**	1.000		
F5	.230**	.307**	.322**	.266**	1.000	
F6	.730**	.786**	.570**	.640**	.343**	1.000

** . Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows the comparison of the human resource systems factors for both the banks using T Test. The results show that there is a significant difference between the two banks on the human resource systems factors at 0.025 and 0.05 level values except for the sixth factor which is significant at 0.05 levels, supporting that difference exists in both the banks across human resource systems variables.

Table 7: Significant difference between SBI and JRB on the basis of Factor Index of Human Resource Systems

Factors (Human Resource Systems)	SBI (Mean)	JRB (Mean)	t value (Calculated)
Positive Work Culture(F1)	2.99	2.72	2.69*
Human Resource Planning(F2).	3.40	2.98	3.34*

Leadership, Motivation & Attachment(F3)	3.70	2.92	8.5*
Performance Appraisal ,Decision Making & Development(F4)	3.00	2.59	3.85*
Collaborative Culture (F5)	4.74	4.51	4.24*
Communication and Salaries (F6)	3.72	3.61	1.28**

(*t value significant at .05 and .025)

(**t value significant at .05)

DISCUSSION AND CONCLUSION

The roles and responsibilities of human resource profession continue to evolve over time. From personnel management, it evolved into human resource management and now, there are strong indications that the profession is beginning to gain momentum on its recognition as human capital management. These evolutionary changes are driven by a multitude of factors both internal and external to the organizations. The emphasis today is to create value and recognise the human resource as a strategic asset for the organization. Clearly, human competence is the engine behind the creation of value.

Every business exists in a given environment, which provides opportunities and challenges. Building organizational capability requires specific besides a vertically integrated strategy, the integration of different horizontal facets and initiatives of human resource that will provide the value. This includes the integration of employee relations, compensation and benefits, organizational development, performance management, human resource development, manpower planning and procurement and labor management relation. Every human resource process, tool or technology should leverage talent to realize the organizational vision, horizontally with each other. Not one facet of the total human resource system can be designed without it having implications upon the other. The value chain relationship must be established to gage maximum organizational benefits. This holds true for the rural banks as well understudy.

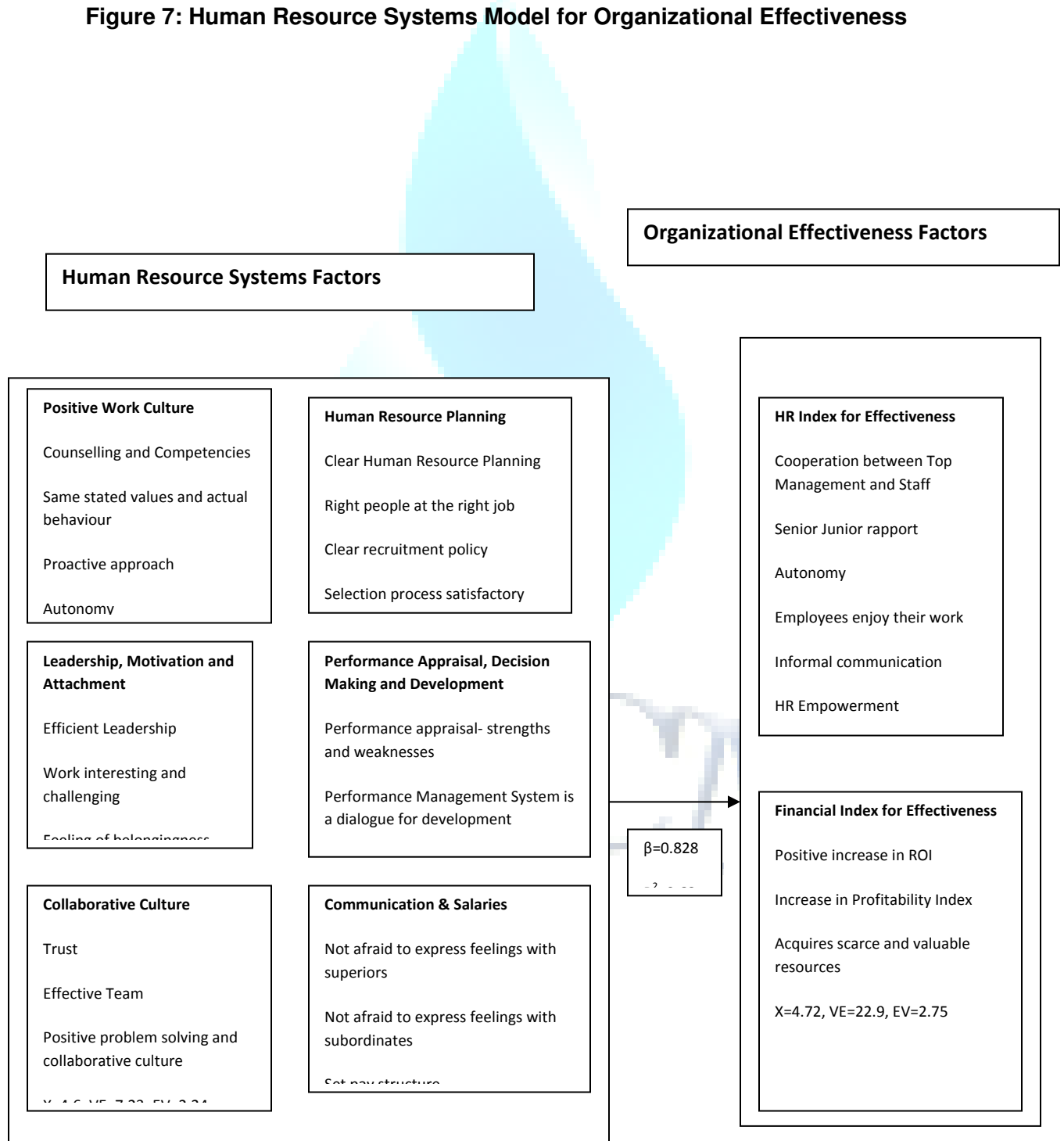
The study also shows that the banks in the rural area should be backed up with technology based management information system as timely and informed decision making would be possible only by this. The comparative analysis of the SBI and JRB shows that there is an urgent need to network the branches of the JRB for timely generation and consolidation of data from various branches spread in the interiors. In short, both the rural banks and especially the Jammu Rural bank has to reorient the human resource systems to attain organizational effectiveness.

At present, the major focus of rural banks is efficiency by superior product positioning and higher employee productivity skills. The competition in the rural banking industry is also likely to intensify in the near future. Accordingly, the rural banks also need to transit from being inwardly focused to becoming a true market-facing banks.

The environment scanning shows the importance of human resource systems for achieving organizational excellence. Clearly, the approach to human resource systems will have to change in tune with the fast changing banking networked environment. SBI for example, carries out training and development programmes regularly; however, specific training packages including behavioural focus for

rural banking have to be developed. Further, the focus must shift from generalist orientation of the staff to knowledge orientation, i.e. the ability to imbibe and absorb technology. Thus, Information Communication Technology (ICT) adaptation is cardinal in the rural areas for effective banking. To cap it all, the rural banks under study should revamp their human resource departments and evolve appropriate policies to make the best use their human capital. The Model (including results) of the present study has been depicted in Figure 7.

Figure 7: Human Resource Systems Model for Organizational Effectiveness



Conclusively, the rural banks in India function in the environment wherein banking ecosystem includes the plans and policies of the apex banks and financial institutional bodies. Therefore, guided by the findings of the study and the observation in general in the rural banking sector in India, the broad guidelines suggested are as under:

- Optimum use of HR function as a tool to increase organisational effectiveness
- Invest in HR programs and allocate resources according to priority needs.
- Increased involvement of supervisors, line management and executives in the training and development of their workforce.
- Increasingly responsive, result driven, customer driven HR activities
- Linkage of HR to a broader HR and organisational framework.
- Competency Mapping and its linkage to organisational effectiveness
- A framework in which to plan and manage bank's HR activities
- Awareness of HR as a key management tool
- Assessment of the effectiveness of HR within the context of organisational performance.
- Cascade organization's strategic goals to individual level and to provide a framework of goals and standards from which to measure performance.
- Focus on performance management system to strike a balance between performance and competence in order to excel at individual level
- Develop functional competencies along with leadership and managerial competencies
- Encourage a two- way communication between the executive and the reporting officer and bring about transparency in the performance assessment process
- Develop action and training plans to correct performance problems, and establish goals for the time period specified and review them timely.

The present piece of the study leads us to the conclusion that human resource systems significantly contribute to the overall health and its effectiveness in rural banking sector in India in general, and the organisations understudy in particular. The study further supports that human resource systems transactions when progressive lead to higher levels of commitment and motivation, thus, generating higher levels of productivity and organizational effectiveness in return. Though indicative in nature, the present study has been able to present some trends in the Indian rural banking sector. Though the study is undertaken at the micro level the findings can be extended to draw inferences for further exploration and investigation at larger canvas. Nevertheless, the researchers believe that the findings of the study shall prove useful in supporting future research in the area.

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A COMPARATIVE STUDY ON THE PRICE MOVEMENTS BETWEEN GOLD AND CRUDE OIL BETWEEN 2006 AND 2007

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ABSTRACT

Normally the price movements of gold and crude will be in the same direction. But during 2006 and 2007 the price movement of gold and crude was abnormal and there seemed a high volatility. Normally the investors predict same pattern of fluctuations in the price movements between gold and crude. So the investors were not in a position to take the investment decision. Hence a study was conducted to analyze the pattern of price movements. The graphical representation of price movements for 24 months from Jan 2006 to Dec 2007 was collected and analyzed. The pattern of price and the relationship between the prices of gold and crude during these 24 months analyzed. The reasons for the fluctuations were probed and certain reasons are identified. Certain general suggestions are made for the invertors in taking decision to invest in gold and crude when similar situations are experienced by the investors in future.

INTRODUCTION

The gold and crude oil play a vital role in the world economy and international commodity market. Even though the application of both gold and crude oil are different, the gold and crude have a wide usage in all developed, developing and under developed countries. But, the oil reservoirs are not universally gifted to all the countries throughout the world. The requirements differ from country to country according to their usage or consumption. If there is a gap between the volume produced in the respective country and the requirements, the country will go for importing. Both gold and crude have a great historic development based on their utilities. Hence it is necessary to learn the history and present scenario of gold and crude. It is briefly depicted here.

GOLD

Gold is the oldest precious metal known to man. Therefore, it is a timely subject for several reasons. The 8,000 years of experience say "gold is forever". The most famous England Economist, John Maynard Keynes, has cynically called the gold as "barbarous relic." It is believed that gold is "good as gold". However, we think that the more pragmatic ancient Egyptians were perhaps more accurate in observing that, gold's value was a function of its pleasing physical characteristics and its scarcity. The gold has the following unique features.

- Gold is primarily a monetary asset and partly a commodity.
- More than two thirds of gold's total accumulated holdings account as 'value for investment' with central bank reserves, private players and high-carat Jewells in India.
- Less than one third of gold's total accumulated holdings are as a 'commodity' for Jewell in Western markets and usage in industry.
- The Gold market is highly liquid and gold held by central banks, other major institutions and retail Jewelers keep coming back to the market.
- Due to large stocks of Gold as against its demand, it is argued that the core driver of the real price of gold is stock equilibrium rather than flow equilibrium.
- Economic forces that determine the price of gold are different.
- South Africa is the world's largest gold producer with 394 tons in 2001, followed by US and Australia.
- India is the world's largest gold consumer with an annual demand of 800 tons.

The price moments of Gold and Crude oil were heavily fluctuating during the year 2006 and 2007. The pattern of the trend is studied in this project.

CRUDE OIL

General Characteristics

- Crude oil is a mixture of hydrocarbons that exists in a liquid phase in natural underground reservoirs. Oil and gas account for about 60 per cent of the total world's primary energy consumption.
- Almost all industries including agriculture are dependent on oil in one way or other. Oil & lubricants, transportation, petrochemicals, pesticides and insecticides, paints, perfumes, etc. are directly affected by the oil prices.
- Aviation gasoline, motor gasoline, naphtha, kerosene, jet fuel, distillate fuel oil, residual fuel oil, liquid petroleum gas, lubricants, paraffin wax, petroleum coke, asphalt and other products are obtained from the processing of crude and other hydrocarbon compounds.
- The prices of crude are highly volatile. High oil prices lead to inflation that in turn increases input cost. It reduces non-oil demand and lowers the investment in net oil importing countries.

Categories of Crude oil

- West Texas Intermediate (WTI) crude oil is of very high quality. Its API gravity is 39.6 degrees (making it a "light" crude oil), and it contains only about 0.24 percent of sulphur (making a "sweet" crude oil). WTI is generally priced at about a \$2 to \$ 4 per-barrel premium to OPEC.
- Brent Crude Oil stands as a benchmark for Europe.
- India is very much reliant on oil from the Middle East. The OPEC has identified China & India as their main buyers of oil in Asia.

Crude Oil Units (average gravity)

- 1 US barrel = 42 US gallons.
- 1 US barrel = 158.98 liters.
- 1 tone = 7.33 barrels.

- 1 short ton = 6.65 barrels.
Note: barrels per ton vary from origin to origin.

For years together, there exists a continuous raise in price for the gold and crude. The usage of the gold and crude is also going up due to wide applications. Even though, government of India had taken many steps to introduce alternative energy like bio-gas, it was not able to succeed to the expected level of production to meet the current requirements. Moreover, the prices of gold and crude are not stable. There are many players in the commodity market playing different roles like brokers, traders, investors etc. In India, many investors engaged in online trading of commodity. As both the gold and crude have upward trend in their price movements, many investors are attracted towards these two commodities. During the year 2006 and 2007, both the gold and crude prices were highly volatile in nature. So, the investors often confused to choose between these two due to high volatility in gold and crude price during this period. Hence, this study is made to help the investors to know the pattern of change in prices of gold and crude so as to decide whether to invest in gold or crude or both.

OBJECTIVES OF THE STUDY

1. To make a study on the prices of Gold and Crude oil in the year 2006 and 2007.
2. To make a study on the pattern of changes in gold and crude oil prices during 2006 – 2007.
3. To make suggestions to the investors who are interested in investing in gold and crude during the similar situations that occurred in the commodity market for gold and crude.

SCOPE OF THE STUDY

Today, MCX features amongst the world's top three bullion exchanges and top four energy exchanges. MCX offers a wide spectrum of opportunities to a large cross section of participants including producers/processors, traders, corporate, regional trading centre, importers, exporters, co-operatives and industry associations amongst others. The Headquarter is in the financial capital of India, Mumbai. National Commodity and Derivatives Exchange Limited (NCDEX) is a professionally managed on-line multi-commodity exchange promoted by Life Insurance Corporation of India (LIC), National Bank of Agriculture and Rural Development (NABARD) and National Stock Exchange of India Limited (NSE). It also provides a wide spectrum of opportunities to a large cross section of participants for commodity trading.

The price movements of Gold and Crude oil were heavily fluctuating during the year 2006 and 2007. Every day the prices of both gold and crude oil are varying during this period. Even though there is an upward movement in an average level for both prices of gold and crude oil there is a difference in pattern of changes. So the investors are not in a position to decide the better option for investment between gold and crude. So, this study would give an idea to the investors in future when such similar situation prevails in the commodity market for gold and crude.

METHODOLOGY

1. The Graphical Representations are made to know the pattern of price changes.
2. The Correlation is calculated for 24 months from January 2006 to December 2007 by using the following formula :

$$r = \frac{(x - \bar{x})(y - \bar{y})}{\sqrt{(x - \bar{x})^2 (y - \bar{y})^2}}$$

This is used to find out the relationship of the prices between the gold and crude oil at different periods from January 2006 to December 2007. The correlation for every month of gold and crude helps to understand the degree of pattern between the prices of gold and crude in the respective months.

DATA COLLECTION

PRIMARY DATA

No Primary data used for this study.

SECONDARY DATA

The secondary data were collected from the following:

1. Company brochures
2. Commodity websites
3. Journals
4. Specified books

TOOLS OF ANALYSIS

1. Correlation Analysis
2. Value Chart Analysis
3. Graphs

INTRODUCTION

A. COMMODITY MARKET

The vast geographical extent of India and her huge population is aptly complemented by the size of her market. The broadest classification of the Indian Market can be made in terms of the commodity market and the bond market. Here, we shall deal with the former in a little detail.

The Commodity market in India comprises of all palpable markets that we come across in our daily lives. Such markets are social institutions that facilitate exchange of goods for money. The cost of goods is estimated in terms of domestic currency. Indian Commodity Market can be subdivided into the following two categories

- Wholesale Market
- Retail Market

PRESENT SCENARIO

The traditional wholesale market in India dealt with whole sellers who bought goods from the farmers and manufactures and then sold them to the retailers after marking a profit in the process. It was the retailers who finally sold the goods to the consumers. With the passage of time the importance of whole sellers began to fade out for the following reasons:

- The whole sellers in most situations acted as mere parasites. They did not add any value to the product but raised its price which was eventually faced by the consumers.
- The improvement in transport facilities made the retailers directly interact with the producers and hence the need for whole sellers was not felt.

In recent years, the extent of the retail market (both organized and unorganized) has evolved in leaps and bounds. In fact, the success stories of the commodity market of India in recent years has mainly centered on the growth generated by the Retail Sector. Almost every commodity under the sun both agricultural and industrial is now being provided at well distributed retail outlets throughout the country.

Moreover, the retail outlets belong to both the organized as well as the unorganized sector. The unorganized retail outlets of the yesteryears consist of small shop owners who are price takers where consumers face a highly competitive price structure. The organized sectors on the other hand are owned by various business houses like Pantaloons, Reliance, TATA and others. Such markets usually sell a wide range of articles both in agricultural and manufactured, edible and inedible, perishable and durable. Modern marketing strategies and other techniques of sales promotion enable such markets to draw customer from every section of the society. However, the growth of such markets has still centered on the urban areas primarily due to infrastructural limitations.

B. NYMEX - NEWYORK MERCHANTILE EXCHANGE

The New York Mercantile Exchange Inc. is the world's largest physical commodity futures exchange and the prominent trading forum for energy and precious metals. The Exchange has stood for market integrity and price transparency for more than 135 years. Transactions executed on the Exchange avoid the risk of counterparty default because the New York Mercantile Exchange clearing house acts as the counterparty to every trade. Trading is conducted in energy, metals, soft and environmental commodity futures and options via the Chicago Mercantile Exchange Electronic Trading System, open outcry, and New York Mercantile Exchange Clear Port.

New York Mercantile Exchange pioneered the development of energy futures and options contracts in 1978 as means of bringing price transparency and risk management to this vital market.

We invite you to explore our site and learn more about New York Mercantile Bank, our markets, and other information of public interest.

DEALINGS

New York Mercantile Exchange provides markets for the trading and clearing of crude oil, gasoline, heating oil, natural gas, electricity, propane, coal, uranium, environmental commodities, soft, gold, silver, copper, aluminum, platinum, and palladium. Many different types of options are also available for most of these products, including options on the price differentials between crude oil and its products (crack spreads). Various futures contract months (calendar spreads), and European and Asian style options.

In addition to its benchmark physically delivered products, New York Mercantile Exchange also offers financially settled full-sized and New York Mercantile Exchange min NYTM contracts.

The New York Mercantile Exchange Clear Port Clearing system helps the marketplace mitigate counterparty credit risk by processing off-exchange transactions through New York Mercantile Bank's clearing house in the same manner as the Exchange's core futures contracts. Each day, hundreds of thousands of transactions in more than 400 energy markets are cleared through the New York Mercantile Exchange Clear Port clearing system.

HOW TO GET STARTED

Investors looking for a fast paced dynamic market with excellent liquidity that can act as a counterweight to the stocks and bonds in their portfolio will want to learn more about the New York Mercantile Exchange futures and options markets.

The Challenge in meeting this price volatility takes place in the vigorous given and take among the traders on the New York Mercantile Exchange where the best up-to-the minute price emerges from their consensus. The price quotations are then used as benchmarks by buyers and sellers in the energy and metal markets worldwide.

Future prices are not price predictions, but are the collective current opinion of the market place of where prices appear to be heading. That opinion and the direction of prices can change in an instant, which makes trading these markets so challenging and potentially rewarding.

A MARKET OPEN TO ALL

New York Mercantile Exchange is a public market forum and anyone can apply a role in these vital global markets. Participation is not difficult, but a few requirements must be met. The first step is to open an account through a licensed Series 3 commodity futures broker.

FINDING THE RIGHT BROKER

The broker will be your point of entry to the markets, so make your selection with the same care and due diligence as you would any other financial services professional upon whom you rely.

The broker you choose should serve a clientele geared towards your level of trading. Some brokers mainly deal with commercial and institutional customers, some with individuals of high net worth, while others primarily serve smaller investors.

BROKERS OFFER DIFFERENT LEVELS OF SERVICE

1. A full service brokerage firm will be able to offer advice on investments and strategy, provide research, and contact you regularly with trading advice. A full-service brokerage could be especially useful if you are following many markets. The fees at a full service firm are usually higher than other types of firms.

2. Discount brokers offer limited services and charge lower fees. Investors who do their own research and are confident in their trading abilities often find that discount brokers meet their needs.
3. Introducing brokers are full service firms which execute the buy and sell orders through the large well known financial houses which are clearing members of the Exchange. Introducing brokers are usually found in smaller cities and while they may not have the name recognition of a big Wall Street firm, their service is often top- notch.

Once you decide on the type of broker fits your needs and abilities, how do you know who is reputable?

The first place to check is with the National Futures Association which keeps records of any disciplinary actions against brokers. Through its online system, Background Affiliation Status Information Center (BASIC), NFA makes available registration information and futures - related actions contributed by NFA, the Commodity Futures Trading Commission (CFTC) and the U.S futures exchanges. For registration information that is not available in BASIC, contact NFA's Information Center at (800) 621 – 3750. The NFA plays an important role in the futures industry's self regulatory responsibilities by screening all firms and individuals wishing to conduct business with the investing public. NFA's activities are overseen by the CFTC, the government agency responsible for regulating the U.S. Futures industry.

Virtually, every firm or individual who conducts commodity futures or options business with the public must be a member of NFA and registered with the CFTC. NFA performs the registration process on behalf of the CFTC. NFA Member categories include: Commodity Trading Advisors (CTA), Commodity Pool Operators (CPO), Futures Commission Merchants (FCM) and Introducing Brokers (IB). The NFA also maintains a database of future-related information including CFTC registration information and NFA membership information

Once you have selected a broker, he will need to know certain information:

- Your financial situation.
- Your experience in trading commodity futures and options.
- Your tolerance for risk.
- Your risk management or investment objectives.

Each commodity trading account can have its own characteristics and be structured to the trader's needs. Brokers are engaged in a highly competitive business and customers may find that commissions are negotiable. Many brokerage firms have streamlined the process of opening an account by making the required forms and documents available through their websites. Read all paperwork including the disclosure forms carefully and fill out the forms as accurately as possible; do not overstate your income. If the brokerage firm is not a clearing member of the Exchange, it must have a relationship with a clearing member. The broker should have the proper forms and be able to help you fill them out to establish your account including your margin account with the clearing member.

MARGIN ACCOUNTS ARE A MUST

All market participants on the New York Mercantile Exchange must have a margin account with a New York Mercantile Exchange clearing member before they can transact any business on the Exchange. Many clearing members provide brokerage services too.

Unlike the stock market, where “margin” refers to borrowed funds, margin in the commodity futures and options markets represents a performance bond - a “good faith” deposit - which can be used to cover adverse movements in prices for futures and short options positions. In order to protect market participants and the integrity of the overall market, the Exchange must ensure that participants have sufficient funds to handle losses. Margins are set by the Exchange based on its analysis of price risk and volatility in the market at that time. Margins are established at sufficiently high levels to adequately guard against market participants becoming over-extended as prices increase and decrease as market conditions change. The margin is not partial payment on a purchase.

The margin requirement also does not represent the value of the position which makes you responsible for a lot of product with a relatively small amount of money. For example, the initial margin required to open a position in a gold futures contract may be approximately \$2,500 to \$3,375, while the futures contract represents a quantity of gold that at the same time could be valued at approximately \$ 90,000. This type of leverage can lead to quick and substantial profits – as well as losses. In fact, it is possible to lose more than the amount of money you’ve deposited so if the markets start moving against you, it is important to know when to incur your losses.

All positions on the New York Mercantile Exchange are marked to market each day by calculating the gain or loss in each contract position resulting from changes in the price of the futures or options contracts each trading day. If the equity in a customer’s account drops to or under an amount predetermined by the Exchange the clearing member must issue a margin call for the customer to restore his equity. Positions that show a gain receive a payment from the clearing house.

OK, you’ve selected a broker and opened a margin account. Now it’s time to put your market theories to the test. How do you do it?

Trading at New York Mercantile Exchange presents an intellectual and strategic challenge to those willing and able to take the risk. Trading can be executed through different financial instruments and venues, making New York Mercantile Bank’s markets extremely flexible and useful to a wide range of market participants which benefits everyone. The more participation, the greater the liquidity of the market and the more competitive the bids to buy and offers to sell.

- The overwhelming majority of New York Mercantile Exchange trading activity is executed via electronic trading. New York Mercantile Exchange also provides two trading floors where open outcry trading takes place. All floor traders, whether acting as a broker on behalf of a customer or trading for their own account, must be a member. Open outcry is a vigorous, often an auction where each participant announces his bid or offers to the market at large, and receives responses from brokers willing to take the other side of the trade.
- Energy and metals futures and options contracts are available for trading and clearing on the Chicago Mercantile Exchange and New York Mercantile Exchange clear port platforms when the trading floor is closed, making the markets available for more than 23 hours a day. To trade electronically, one must have an account with a clearing member and be registered as a user.

A Time to Hedge / a Time to Speculate

Hedgers and speculators also called investors have divergent goals; their presence in the markets complements each other so well. Hedgers do not necessarily seek profit in the futures markets. They use the futures to help stabilize the revenues or costs of their business operations because they have on

offsetting position in the physical market. A gain or loss in the futures market is usually offset to some degree by the corresponding loss or gain in the market for the underlying physical commodity.

Speculators, to the contrary, do seek profit from market movement because they do not have offsetting physical positions. However, for every speculator who tries to profit from a rising market there are those who believe they can profit in a falling market. Most speculators don't try to push the market in any direction - or fool's errand if there ever was one - instead they follow the trend, attempting to time their transactions by buying low and selling high- or first selling high and later buying back low. This flexibility to initiate a strategy as, either a buyer or a seller depending on your view is one of the beauties of the futures markets.

By taking position in the expectation of making a profit, investors fulfill a critical market role in providing the liquidity that hedgers need to easily enter and exit positions. Some traders like to keep track of market fundamentals, the nuts and bolts of supply and demand. Is the weather too hot or too cold? Are their reports of production problems or surpluses jewelry sales brisk or stagnant? Such developments in the underlying markets are often indicators of how prices may move. Other traders study the technical reasons for price movements by using computer programs and examining charts of the market's performance for clues as whether a buying or selling trend can be expected to continue or is due for a reversal.

New York Mercantile Exchange futures and options contracts are available for trading for many months in the future years in most cases. As a practical matter, the most actively traded and volatile contract months are those that are within a few months of a contract's expiration. As the expiration date of the contract draws closer, volume often picks up as activity in the futures market more closely resembles activity in the cash market for the underlying commodity.

C. MCX – MULTI COMMODITY EXCHANGE

MCX is an independent multi commodity exchange. It was inaugurated on November 10, 2003 by Mr. Mukesh Ambani, Chairman and Managing Director, Reliance Industries Ltd., and has permanent recognition from the Government of India for facilitating online trading, clearing and settlement operations for commodities futures market across the country. Today, MCX features amongst the world's top three bullion exchanges and top four energy exchanges. MCX offers a wide spectrum of opportunities to a large cross section of participants including producers/ processors, traders, corporate, regional trading centre, importers, exporters, co-operatives and industry associations amongst others. Headquartered in the financial capital of India, Mumbai, MCX is led by an expert management team with deep domain knowledge of the commodities futures market. Presently, the average daily turnover of MCX is around USD 1.55 bn (Rs.7, 000 Crore – April 2006), with a record peak turnover of USD 3.98 bn (Rs.17, 987 crore) on April 20, 2006. In the first calendar quarter of 2006, MCX holds more than 55% market share of the total trading volume of all the domestic commodity exchanges. The exchange has also affected large deliveries in domestic commodities, signifying the efficiency of price discovery. Being a nation-wide commodity exchange having a state of the art infrastructure, offering multiple commodities for trading with wide reach and penetration, MCX is well placed to tap the vast potential by the commodities market.

Key shareholders

- Financial Technologies (I) Ltd.,
- State Bank of India and its associates,
- National Bank for Agriculture and Rural Development (NABARD)
- National Stock Exchange of India Ltd., (NSE)
- Fid Fund (Mauritius) Ltd., - and affiliate of Fidelity International,
- Corporation bank,
- Union Bank of India,
- Canara bank,
- Bank of India,
- Bank of Baroda,
- HDFC bank,
- SBI Life Insurance Co. Ltd.

D. NCDEX - NATIONAL COMMODITIES AND DERIVATIVES EXCHANGE

National Commodities & Derivatives Exchange Limited (NCDEX) is a professionally managed on-line multi commodity exchange. The shareholders are:

Promoter Share Holders

The promoters are Life Insurance Corporation of India (LIC), National Bank of Agriculture and Rural Development (NABARD) and National Stock Exchange of India Limited (NSE).

Other Share Holders

The other share holders are Canara bank, CRISIL Limited (formerly, the Credit Rating Information Services of India Limited), Goldman Sachs, Inter-Continental Exchange (ICE), Indian Farmers Fertilizer Co-operative Limited (IFFCO) and Punjab National Bank (PNB).

NCDEX is the only commodity exchange in the country promoted by national level institutions. This enables it to offer many benefits, which are currently in short supply in the commodity markets. The institutional promoters and shareholders of NCDEX are prominent players in their respective fields and bring with them the institutional building experience, trust, nationwide reach, technology and risk management skills.

NCDEX is a public limited company, incorporated on April 23, 2003 under the Companies Act, 1956. It obtained its Certificate for Commencement of Business on May 9, 2003. It commenced its operations on December 15, 2003.

NCDEX is a nation-level, technology driven on-line commodity exchange with an independent Board of Directors and professional management. It is committed to provide a world-class commodity exchange platform for market participants to trade in a wide spectrum of commodity derivatives driven by best global practices, professionalism and transparency.

NCDEX is regulated by Forward Markets Commission. NCDEX is subjected to various laws of the land like the Forward Contracts (Regulation) Act, Companies Act, Stamp Act, Contract Act and various other legislations. NCDEX is located in Mumbai and offers facilities to its members about 550 centers throughout India. The reach will gradually be expanded to more centers. NCDEX currently facilitates trading of 57 commodities. Agriculture produces Barley, Cashew, Castor Seed, Channa, Chilly, Coffee-

Arabica, Coffee- Robusta, Crude Palm Oil, Cotton Seed Oilcake, Expeller Mustard Oil, Groundnut (in shell), Groundnut Expeller Oil, Guar gum, Guar Seeds, Gur, Jeera, Jute sacking bags, Indian Parboiled Rice, Indian Pusa Basmati Rice,

Indian Traditional Basmati Rice, Indian Raw Rice, Indian 28.5mm Cotton, Indian 31mm Cotton, Masoor Grain Bold, Medium Staple Cotton, Menthal Oil, Mulberry Green Cocoons, Mulberry Raw Silk,

Mustard Seed, Pepper, Potato, Raw Jute, Rapeseed - Mustard Seed Oilcake, RBD Palmolein, Refined Soy Oil, Rubber, Sesame Seeds, Soya bean, Sugar, Yellow Soya bean Meal, Tur, Turmeric, Urad, V-797, Kapas, Wheat, Peas, Metals, Aluminium, Ingot, Electrolytic Copper Cathode, Gold Mild Steel Ingots, Nickel Cathode, Silver, Sponge, Iron, Zinc, Energy, Brent Crude Oil, Furnace Oil.

E. GOLD AND CRUDE MARKET

World Gold Markets

- London as the great clearing house
- New York as the home of futures trading
- Zurich as a physical turntable
- Istanbul, Dubai, Singapore and Hong Kong as doorways to important consuming regions
- Tokyo where TOCOM sets the mood of Japan
- Mumbai under India's liberalized gold regime

The India's share in the world Gold Industry is depicted in the following table.

Table - 1

INDIA IN WORLD GOLD INDUSTRY

(Rounded Figures)	India (In Tons)	World (In Tons)	% Share
Total Stocks	13000	145000	9
Central Bank holding	400	28000	1.4
Annual Production	2	2600	0.08
Annual Recycling	100-300	1100-1200	13
Annual Demand	800	3700	22
Annual Imports	600	---	---
Annual Exports	60	---	---

Source: www.mcxindia.com

It is clear from the above table that India has strong market for gold since it has 9% share of total stocks and the annual demand is 800 tons.

INDIAN GOLD MARKET

- Gold is valued in India as a savings and investment vehicle and is the second preferred investment after bank deposits.
- India is the world's largest consumer of gold in jewels as investment.
- In July 1997, the RBI authorized the commercial banks to import gold for sale or loan to jewelers and exporters. At present, 13 banks are active in the import of gold.
- This reduced the disparity between international and domestic prices of gold from 57 percent during 1986 to 1991 to 8.5 percent in 2001.
- The gold hoarding tendency is well ingrained in Indian society.
- Domestic consumption is dictated by monsoon, harvest and marriage season. Indian jewellery off take is sensitive to price increases and even more so to volatility.
- In the cities, gold is facing competition from the stock market and a wide range of consumer goods.
- Facilities for refining, assaying, making them into standard bars in India, as compared to the rest of the world are insignificant both qualitatively and quantitatively.

MARKET MOVING FACTORS

- Above ground supply from sales by central banks reclaimed scrap and official gold loans
- Producer / miner hedging interest
- World macro-economic factors - US Dollar, Interest rate
- Comparative returns on stock markets
- Domestic demand based on monsoon and agricultural output

The frequency distribution of Gold London fixing volatility from 1995 is presented in the following table.

Table - 2**FREQUENCY DIST. OF GOLD LONDON FIXING VOLATILITY FROM 1995**

Percentage Change	> 5%	2 - 5 %	< 2%
<u>Daily</u>			
Number of times	4	54	2147
Percentage times	0.2	2.4	97.4
<u>Weekly</u>			
Number of times	3	62	376
Percentage times	0.7	14.1	85.3

Source: www.mcxindia.com

From the above table it is clear that the frequency of changes in daily and weekly is mostly up to 2% and the number of times the changes occurred is maximum in daily.

BIGGEST PRICE MOVEMENT SINCE 1995

Between September 24 and October 5, 1999, daily prices witnessed a rally of more than 21 %, based on surprised announcement by 15 European central banks of a five-year suspension on all new sales of gold from their reserves.

CRUDE OIL**Indian Scenario**

India ranks among the top 10 largest oil-consuming countries

General Characteristics

- Crude oil is a mixture of hydrocarbons that exist in a liquid phase in natural underground reservoirs. Oil and gas account for about 60 per cent of the total world's primary energy consumption.
- Almost all industries including agriculture are dependent on oil in one way or other. Oil & lubricants, transportation, petrochemicals, pesticides and insecticides, paints, perfumes, etc. are largely and directly affected by the oil price.
- Aviation gasoline, motor gasoline, naphtha, kerosene, jet fuel, distillate fuel oil, residual fuel oil, liquefied petroleum gas, lubricants, paraffin wax, petroleum coke, asphalt and other products are obtained from the processing of crude and other hydrocarbon compounds.
- The prices of crude are highly volatile. High oil prices lead to inflation that in turn increases input costs; reduces non-oil demand and lower investment in net oil importing countries.

Global Scenario

- Oil accounts for 40 per cent of the world's total energy demand.
- The world consumes about 76 million bbl/day of oil.
- United States (20 million bbl/d), followed by China (5.6 million bbl/d) and Japan (5.4 million bbl/d) are the top oil consuming countries.
- Balance recoverable reserve was estimated at about 142.7 billion tones (in 2002), of which OPEC was 112 billion tones.

OPEC

OPEC stands for 'Organization of Petroleum Exporting Countries'. It is an organization of eleven developing countries that are heavily dependent on oil revenues as their main source of income. The current members are Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela.

- OPEC controls almost 40 percent of the world's crude oil.
- It accounts for about 75 percent of the world's proven oil reserves.
- Its exports represent 55 percent.
- Oil accounts for about 30 percent of India's total energy consumption. The country's total oil consumption is about 2.2 million barrels per day. India imports about 70 percent of its total oil consumption and it makes no exports.
- India faces a large supply deficit as domestic oil production is unlikely to keep pace with demand. India's rough production was only 0.8 million barrels per day.
- The oil reserves of the country (about 5.4 billion barrels) are located primarily in Mumbai High, Upper Assam, Cambay, Krishna - Godavari and Cauvery basins.
- Balance recoverable reserve was about 733 million tons (in 2003) of which offshore was 394 million tones and onshore was 339 million tones.
- India had a total of 2.1 million barrels per day in refining capacity.

- Government has permitted foreign participation in oil exploration, an activity restricted earlier to state owned entities.
- Indian government in 2002 officially ended the Administered Pricing Mechanism (APM). Now crude price is having a high correlation with the international market price. As on date, even the prices of crude bi-products are allowed to vary +/- 10% keeping in line with international crude price, subject to certain government laid down norms/ formulae.
- Disinvestment/restructuring of public sector units and complete deregulation of Indian retail petroleum products sector is under way.

The prevailing duties and levies on crude oil is detailed as under

Table - 3
PREVAILING DUTIES & LEVIES ON CRUDE OIL

Particulars	Rates
Basic Customs Duty	10%
Cess	Rs.1800 per metric tone
NCCD*	Rs.50 per metric tone
Education cess	2%
Octroi	3%
War fedge	Rs.57 per metric tone

Source: www.mcxindia.com

Among the levies the basic customs duty is the maximum rate on crude oil.

MARKET INFLUENCING FACTORS

- OPEC output and supply.
- Terrorism, Weather/storms, War and any other unforeseen geopolitical factors that causes supply disruptions.
- Global demand particularly from emerging nations.
- Dollar fluctuations.
- DOE / API imports and stocks.
- Refinery fires & funds buying.

EXCHANGES DEALING IN CRUDE FUTURES

- The New York Mercantile Exchange (New York Mercantile Bank).
- The International Petroleum Exchange of London (IPE).
- The Tokyo Commodity Exchange (TOCOM).

The composite acquisition cost of the crude oil from April 2001 to March 2004 under different frequency variations is presented in the following table.

Table - 4**THE COMPOSITE ACQUISITION COST OF THE CRUDE OIL FROM APRIL 2001 TO MARCH 2004**

Particular	Frequency of % variation			
	0 to 3.1%	3.2 to 6.2%	6.3 to 9.3%	More than 9.3%
Refiner acquisition cost for Crude oil (composite) - Average monthly price from Apr 01 to Mar 04	8	16	4	>8

Source: www.mcxindia.com

From the above table it is understood that the acquisition cost is maximum at frequency of variation 3.2 to 6.2.

INTERNATIONAL OIL PRICE VARIATION

The international oil price variation is depicted in the following table.

Table - 5
MAXIMUM PRICE VARIATION

Period considered (Based on data from Apr 94 to Mar 04)	Percentage
Monthly	23.25
Yearly	28.73

Source: www.mcxindia.com

It is understood that there is a greater percentage of variation in oil price in annual than monthly.

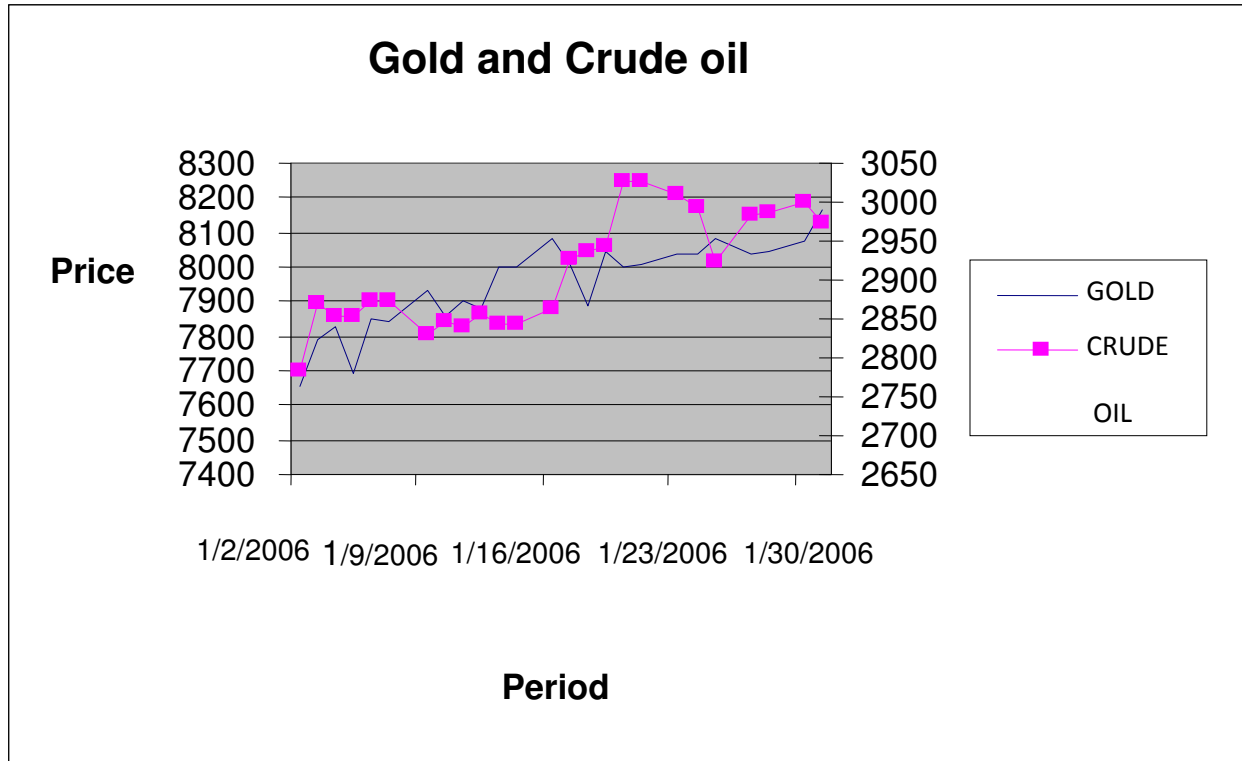
ANALYSIS AND INTERPRETATION

The price movements of the gold and crude for the twenty four month period of 2006 and 2007 are collected and graphical representations are made. The correlation was calculated. The analysis and interpretations are made accordingly.

January 2006

The prices of gold and crude oil for January 2006 are plotted in a graph and presented in the following

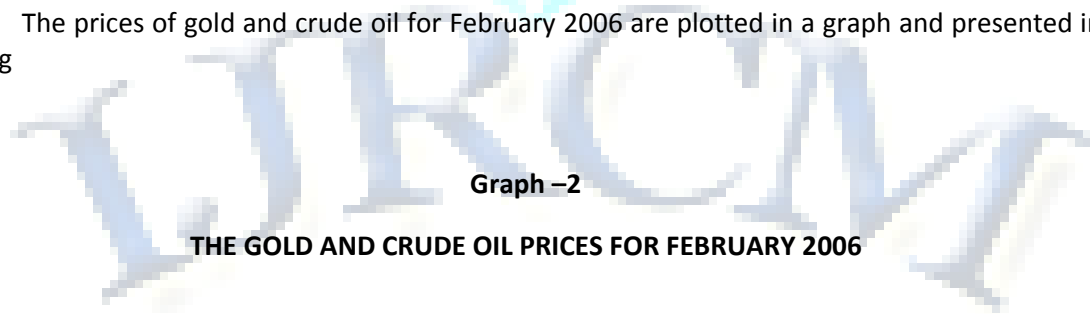
Graph - 1**THE GOLD AND CRUDE OIL PRICES FOR JANUARY 2006**



It indicates the upward direction of the price movements of gold and crude oil. The price volatility was high. The correlation coefficient between the prices of gold and crude oil for the month January 2006 is + 0.91. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The gold investment bankers raised its price by 8% and the oil production decreased by the Oil Petroleum Exporting Countries (OPEC) during this period might be the main reasons for the uptrend of gold and crude oil prices.

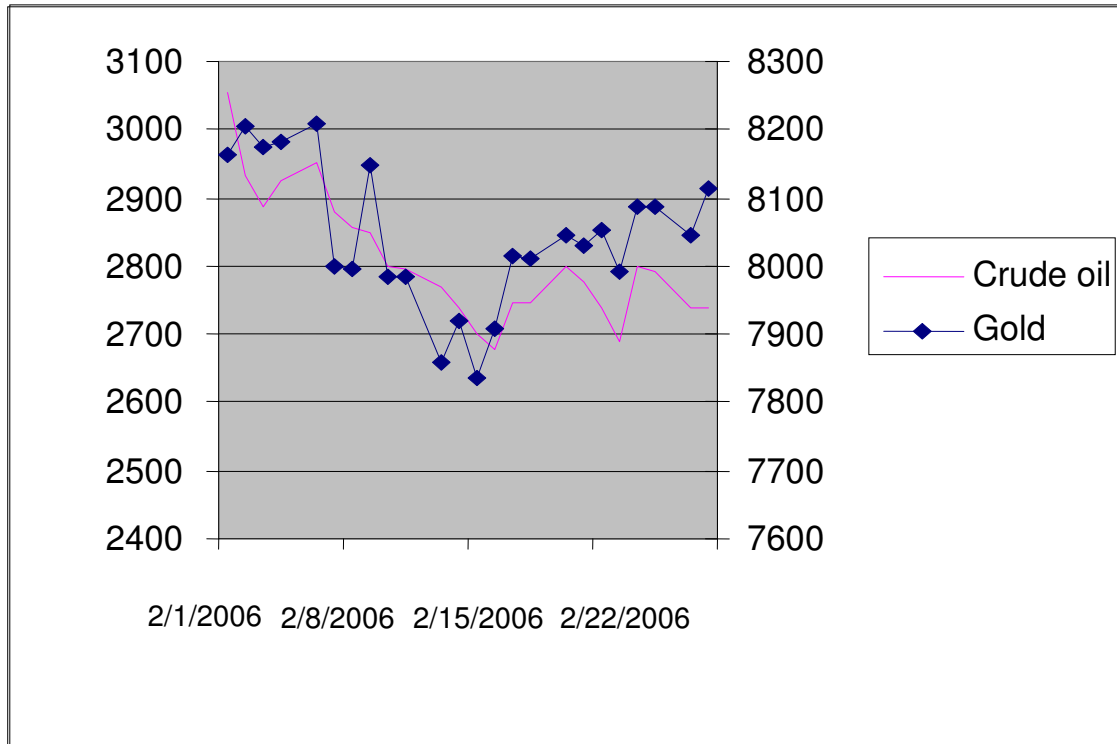
February 2006

The prices of gold and crude oil for February 2006 are plotted in a graph and presented in the following



Graph -2

THE GOLD AND CRUDE OIL PRICES FOR FEBRUARY 2006

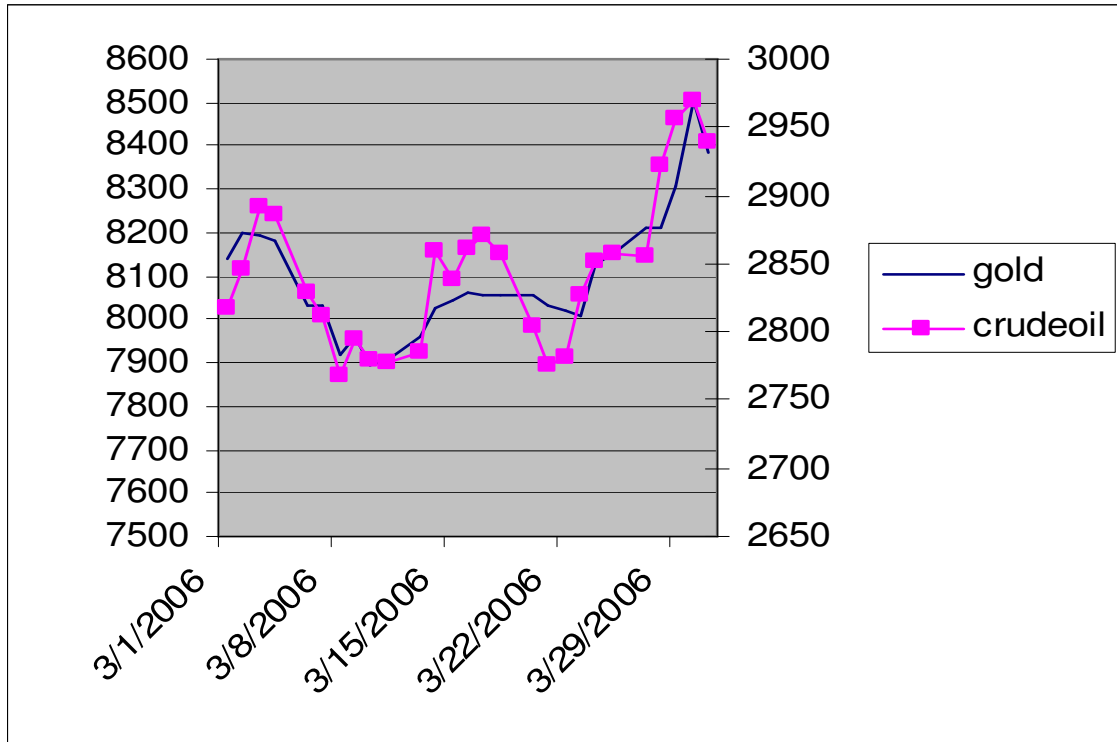


It indicates the decline trend of the prices of gold and crude oil. The price movement was highly volatile. The correlation coefficient between the prices of gold and crude oil for the month February 2006 is + 0.71. So it is inferred that there is a medium level of positive pattern of relationship between the prices of gold and crude oil during this period. The under performance of the US economy and slight increase in oil production during this period might be the main reason for the decline of gold and crude oil prices.

March 2006

The prices of gold and crude oil for March 2006 are plotted in a graph and presented in the following

Graph – 3
THE GOLD AND CRUDE OIL PRICES FOR MARCH 2006

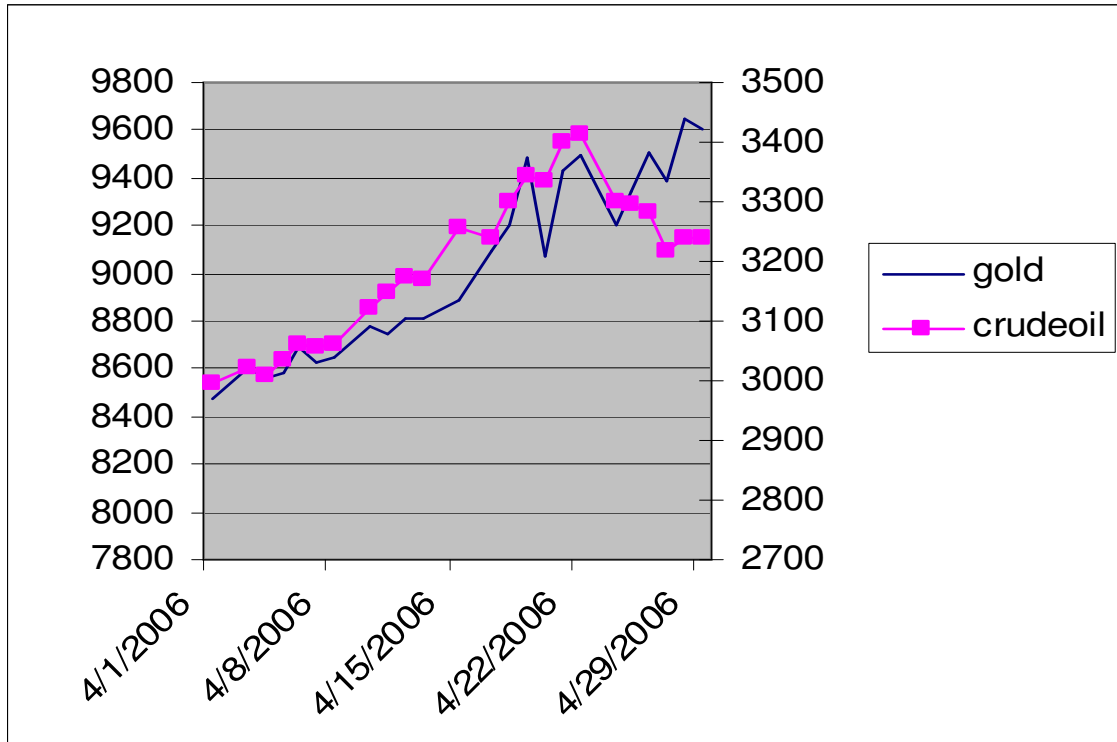


It indicates the uptrend of the prices of gold and crude oil. The price movement was highly volatile. The correlation coefficient between the prices of gold and crude oil for the month March 2006 is + 0.99. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The continuous decline of US dollar and the demand for crude oil increased in USA during this period might be the main reasons for the uptrend for the price of gold and crude oil

April 2006

The prices of gold and crude oil for April 2006 are plotted in a graph and presented in the following

Graph – 4
THE GOLD AND CRUDE OIL PRICES FOR APRIL 2006

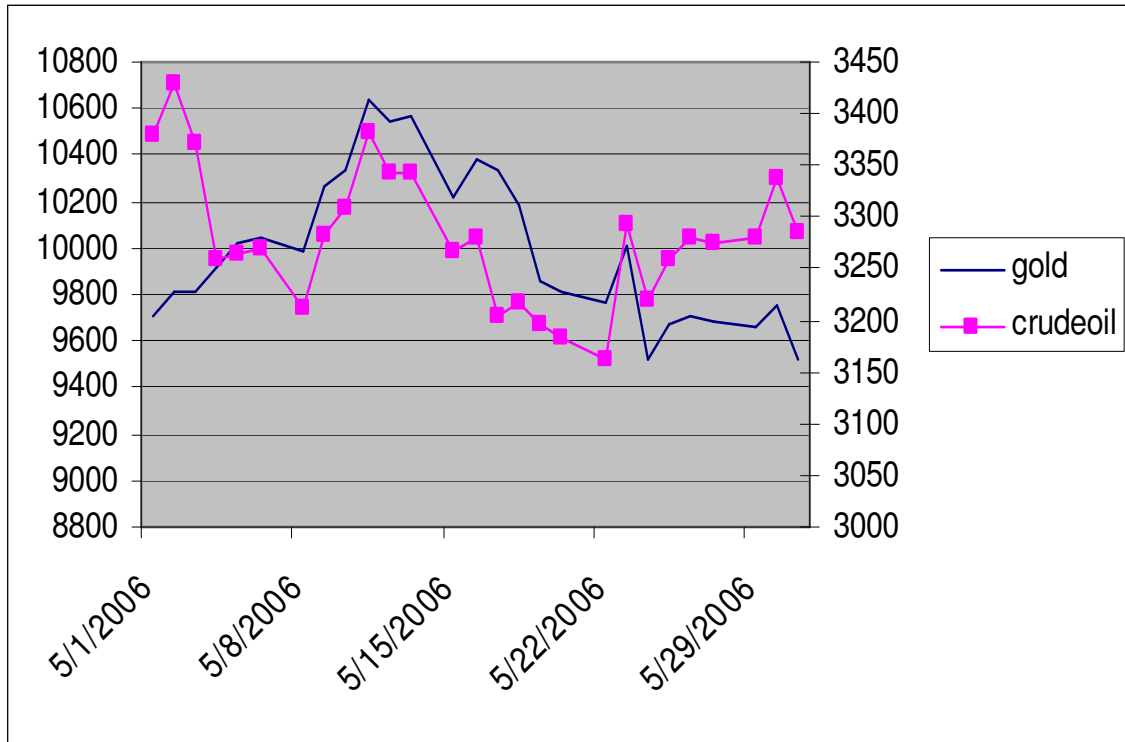


It indicates the uptrend of the prices of gold and crude oil. The price movement was highly volatile. The correlation coefficient between the prices of gold and crude oil for the month April 2006 is + 0.99. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The price target raised by the major gold bankers and slight decline in US commercial Oil Company stocks during this period might be the main reasons for the uptrend of the prices of gold and crude oil.

May 2006

The prices of gold and crude oil for May 2006 are plotted in a graph and presented in the following

Graph -5
THE GOLD AND CRUDE OIL PRICES FOR MAY 2006

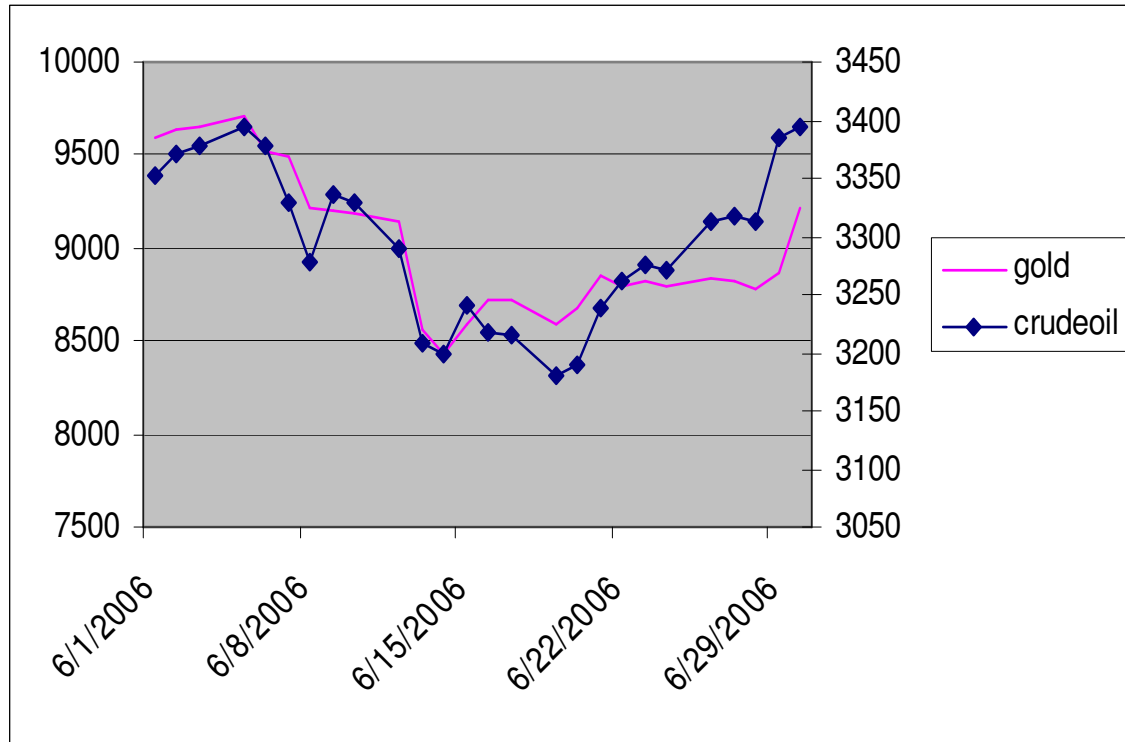


It indicates the downtrend of the prices of gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month May 2006 is + 0.84. So it is inferred that there is a medium level of positive pattern of relationship between the prices of gold and crude oil. The fluctuation of US dollar against the gold and major currencies and there was a huge declined in the consumption of crude oil during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

June 2006

The prices of gold and crude oil for June 2006 are plotted in a graph and presented in the following.

Graph – 6
THE GOLD AND CRUDE OIL PRICES FOR JUNE 2006

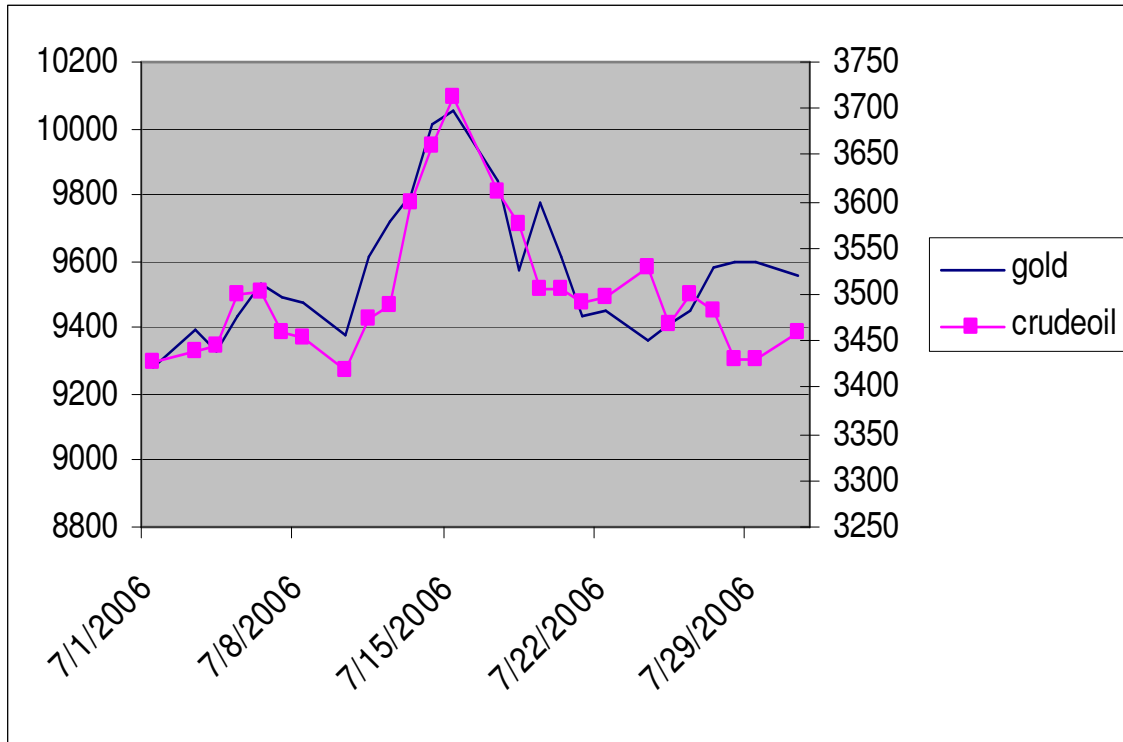


It indicates the uptrend of the prices of the gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month June 2006 is + 0.96. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The continuous Geo – political tension and decline of stock market during this period might be the main reasons for the high volatility and the uptrend of the prices of gold and crude oil.

July 2006

The prices of gold and crude oil for July 2006 are plotted in a graph and presented in the following.

Graph – 7
THE GOLD AND CRUDE OIL PRICES FOR JULY 2006



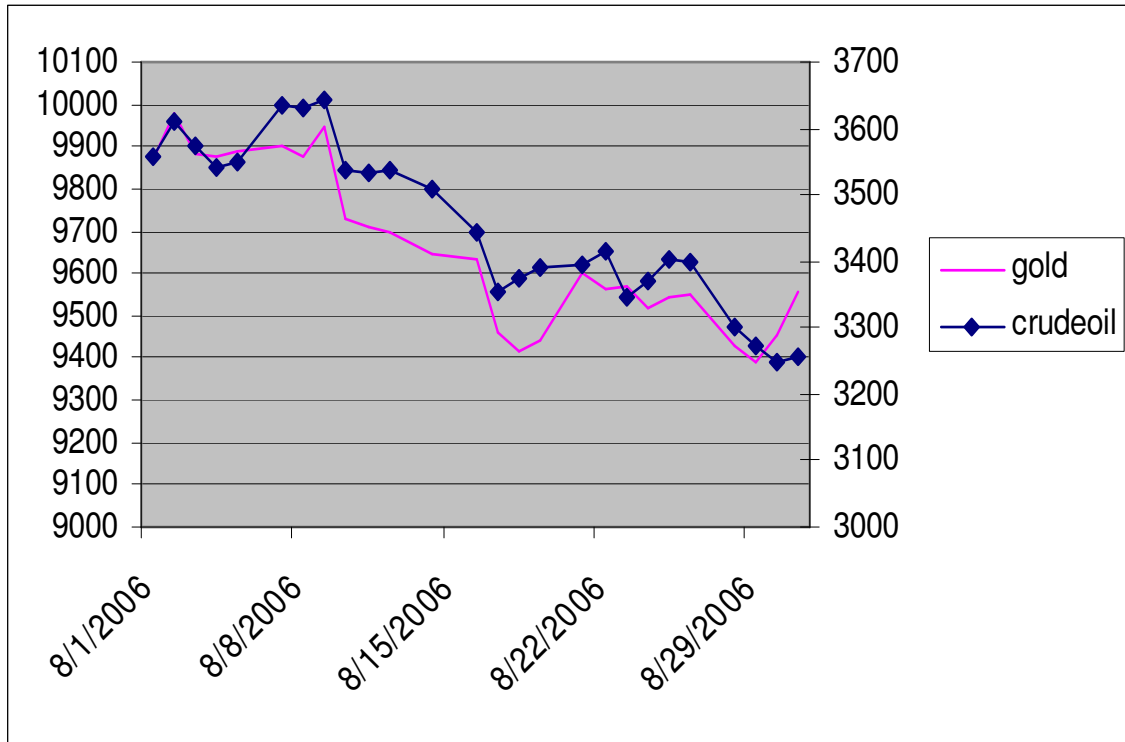
It indicates the downtrend of the prices of gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month July 2006 is + 0.95. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The fluctuation of major currencies and US dollar during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

August 2006

The prices of gold and crude oil for August 2006 are plotted in a graph and presented in the following



Graph – 8
THE GOLD AND CRUDE OIL PRICES FOR AUGUST 2006

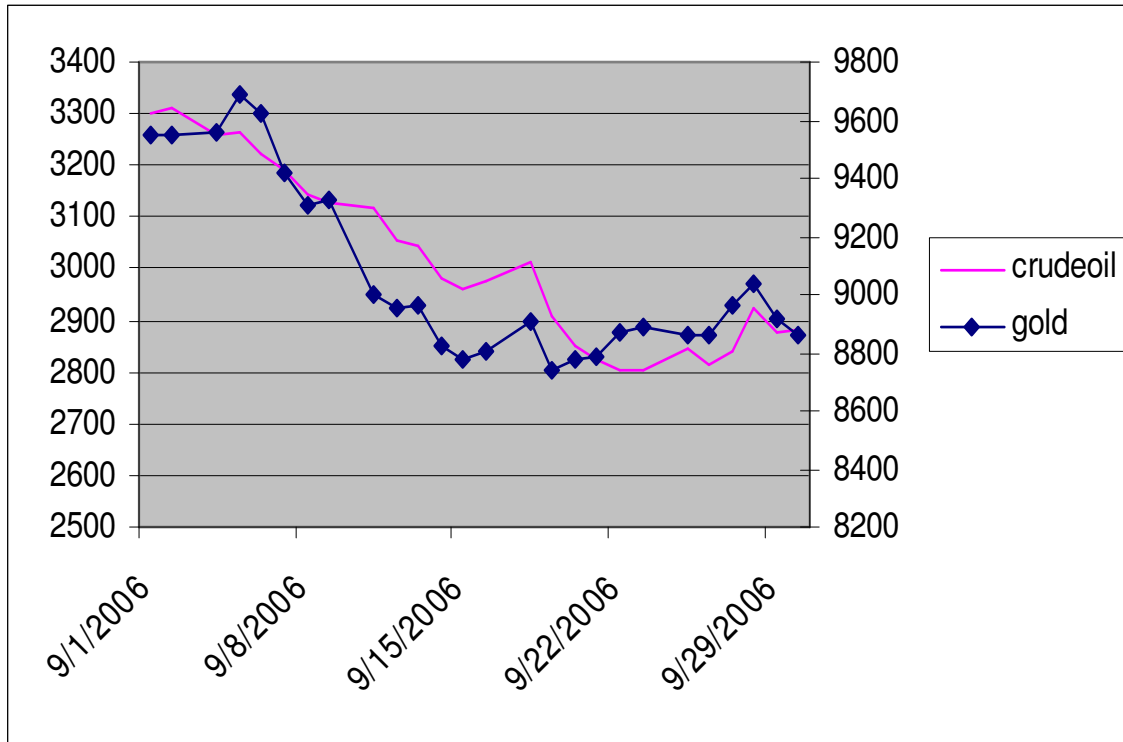


It indicates the downtrend of the prices of gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month August 2006 is +0.98. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil. The exploration activities of the gold producers and the lower interest rate of Federal Reserve Bank during this period might be the main reasons for the decline of the prices of gold and crude oil.

September 2006

The prices of gold and crude oil for September 2006 are plotted in a graph and presented in the following:

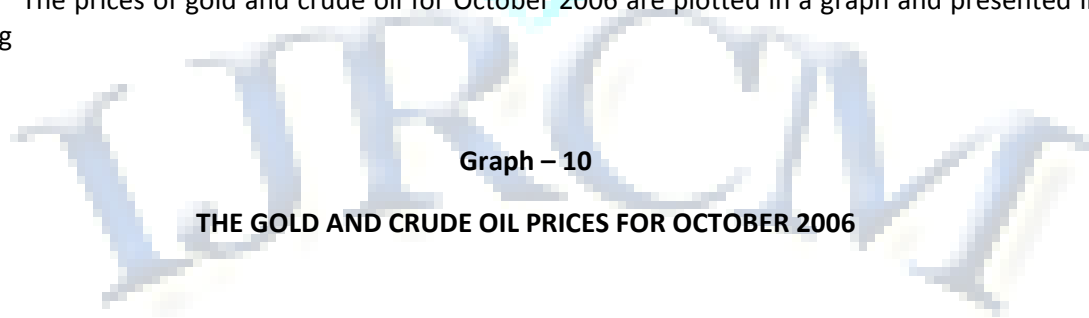
Graph – 9
THE GOLD AND CRUDE OIL PRICES FOR SEPTEMBER 2006



It indicates the downtrend of the prices of gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month September 2006 is +0.98. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The Barrick Gold Corporation and its two subsidiaries lowered the outlook of gold prices and lower oil demand in US during this period might be the main reasons for the decline of the prices of gold and crude oil.

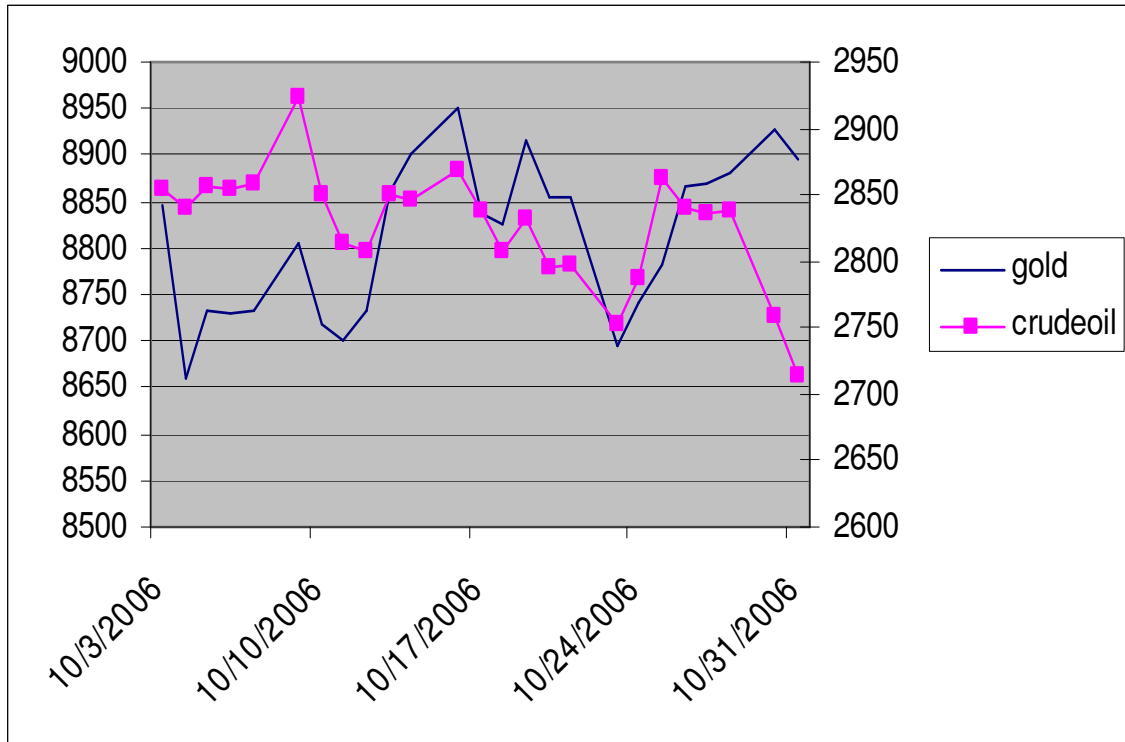
October 2006

The prices of gold and crude oil for October 2006 are plotted in a graph and presented in the following



Graph – 10

THE GOLD AND CRUDE OIL PRICES FOR OCTOBER 2006

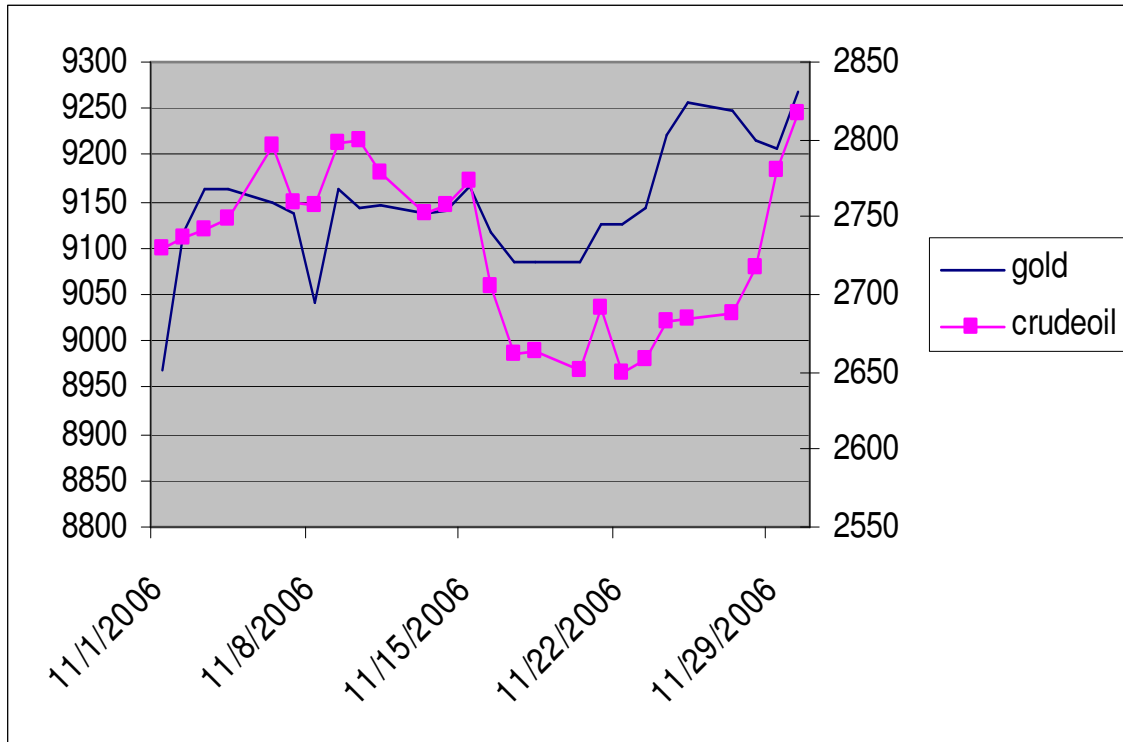


It indicates that the price movements of gold and crude oil are inverse direction at the beginning and end but with high degree of volatility during this period. The correlation coefficient between the prices of gold and crude oil for the month October 2006 is +0.95. So it is inferred that there is a highly positive pattern of relationship between the prices of gold and crude oil during this period. The major gold mines became stable from weaker position and huge supply of crude oil during this period might be the main reasons for the uptrend of gold and the downtrend of crude oil.

November 2006

The prices of gold and crude oil for November 2006 are plotted in a graph and presented in the following:

Graph – 11
THE GOLD AND CRUDE OIL PRICES FOR NOVEMBER 2006

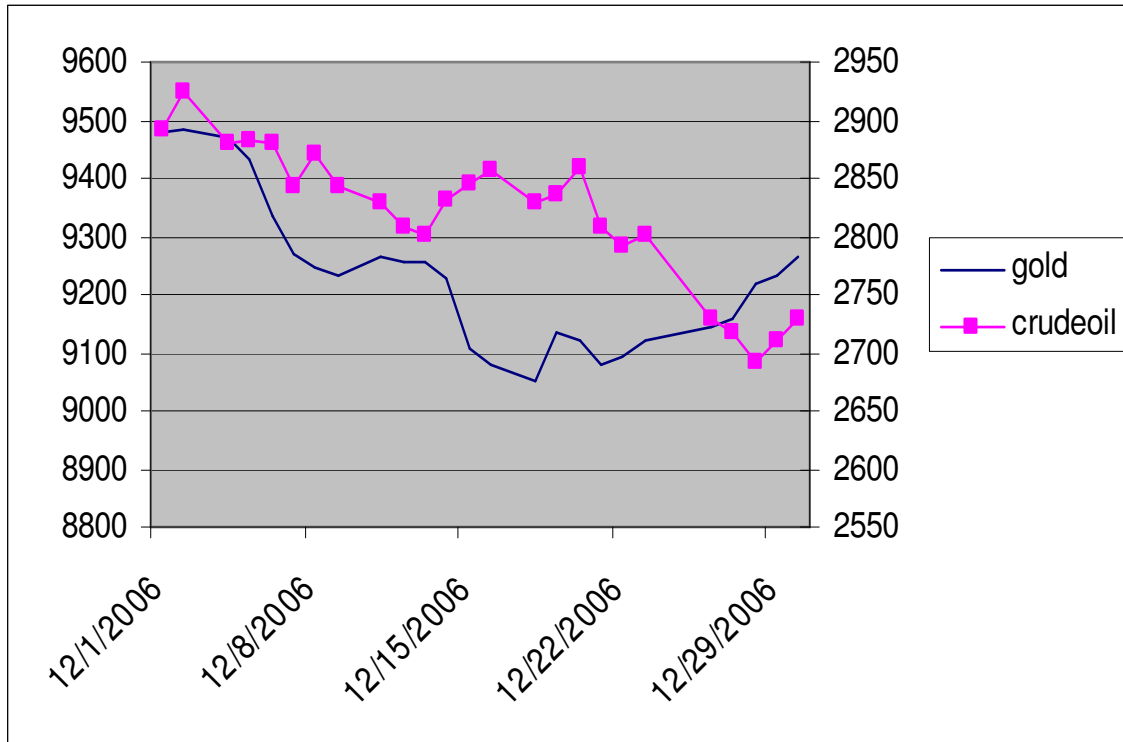


It indicates the uptrend of the prices of gold and crude oil with high degree of volatility in price movements. The correlation coefficient between the prices of gold and crude oil for the month November 2006 is + 0.93. So it is inferred that there is a highly positive relationship between the prices of gold and crude oil during this period. The debt rate of gold raised by the agencies and fluctuation of dollar during this period might be the main reasons for the uptrend of the prices of gold and crude oil.

December 2006

The prices of gold and crude oil for December 2006 are plotted in a graph and presented in the following

Graph – 12
THE GOLD AND CRUDE OIL PRICES FOR DECEMBER 2006

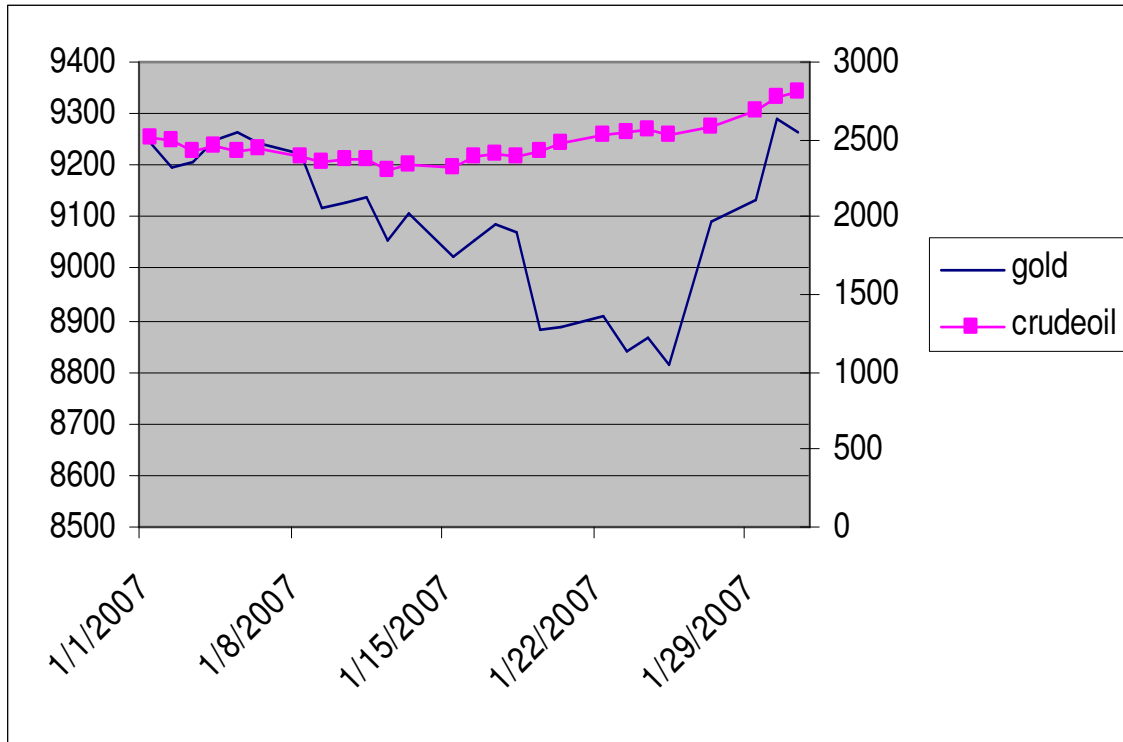


It indicates the downtrend of the prices of gold and crude. The correlation coefficient between the prices of gold and crude oil for the month December 2006 is +0.90. So it is inferred that there is a highly positive relationship between the prices of gold and crude oil during this period. The hedging ratio of gold cut by the CITI group and the huge investment in stock market during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

January 2007

The prices of gold and crude oil for January 2007 are plotted in a graph and presented in the following



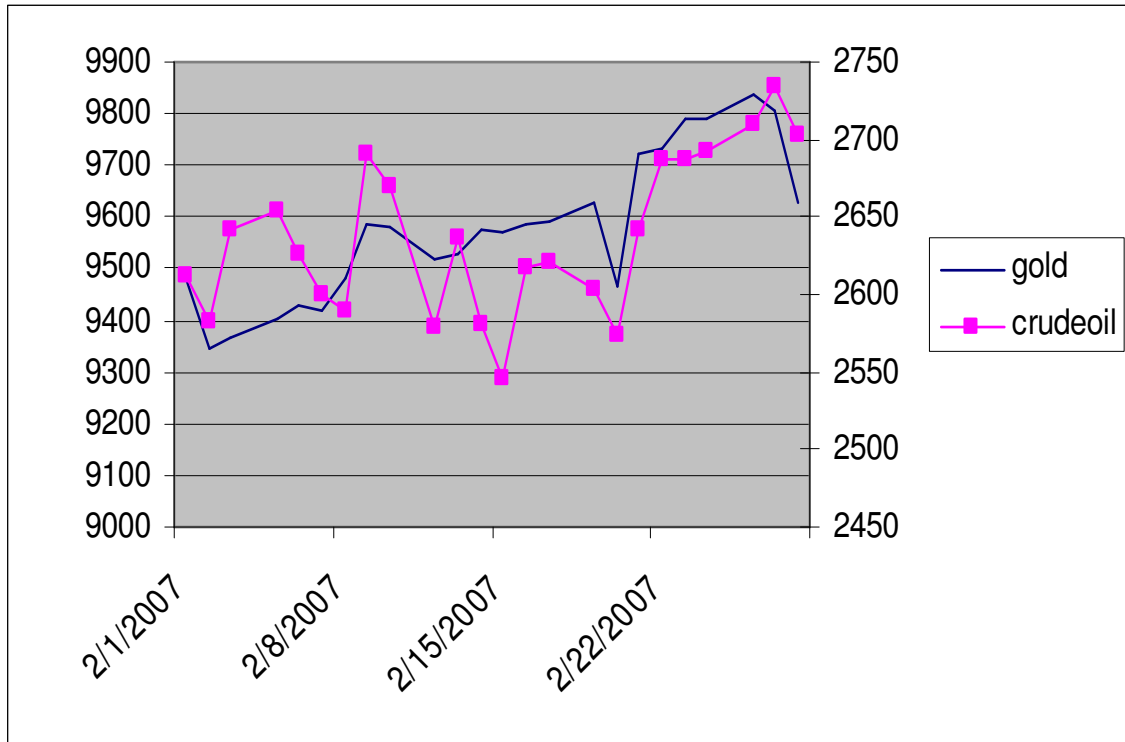


It indicates the uptrend of the gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month January 2007 is +0.86. So it is inferred that there is medium level of positive relationship between the prices of gold and crude oil during this period. The Optimistic assumption of metal prices and the huge oil demand in North America during this period might be the main reasons for the uptrend of the prices of gold and crude oil.

February 2007

The prices of gold and crude oil for February 2007 are plotted in a graph and presented in the following

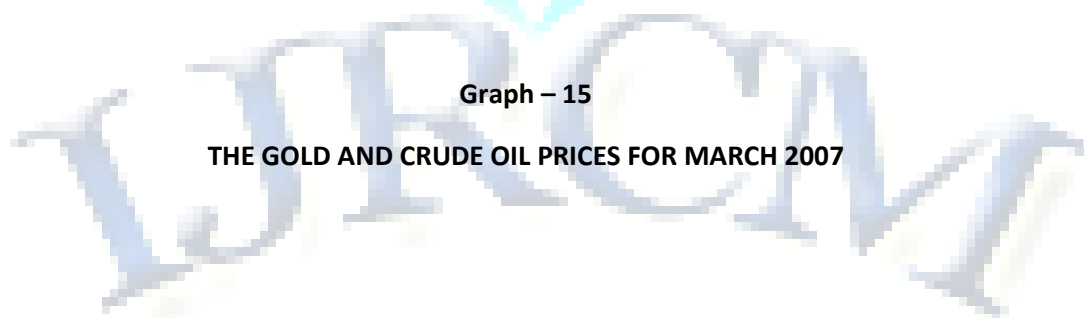
Graph – 14
THE GOLD AND CRUDE OIL PRICES FOR FEBRUARY 2007

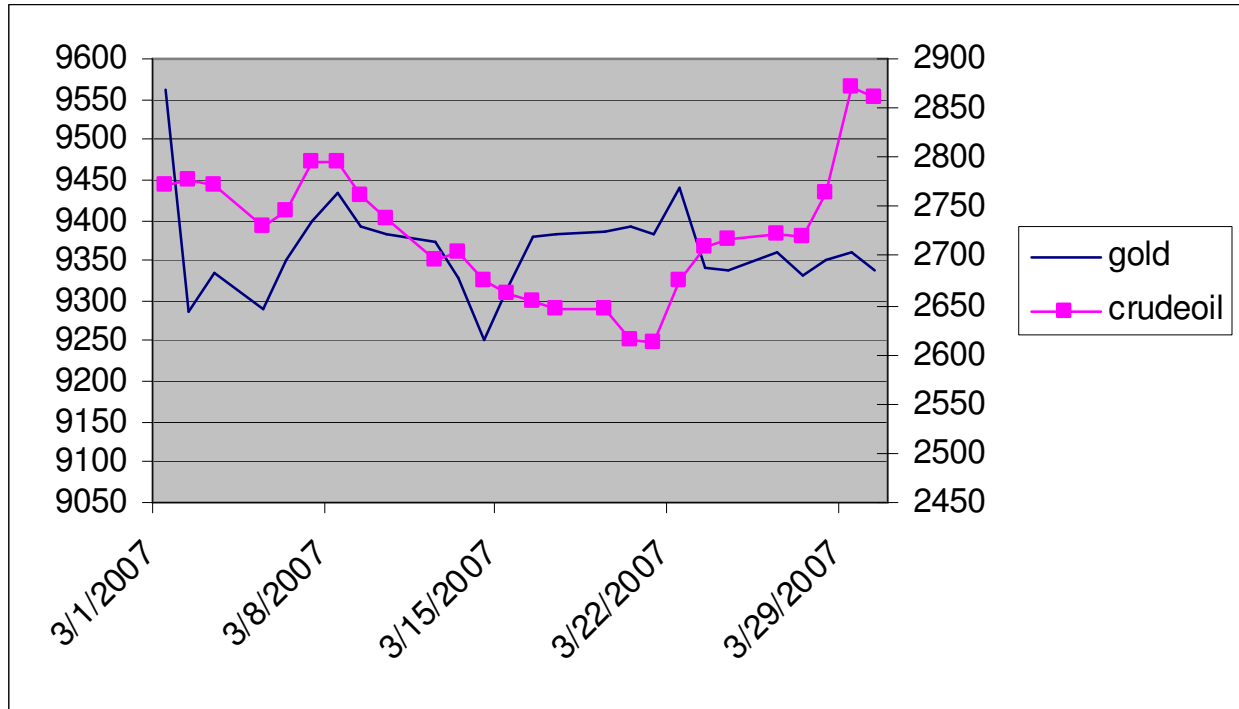


It indicates the uptrend of the prices of gold and crude oil. The correlation coefficient between the prices of gold and crude oil for the month February 2007 is +0.64. So it is inferred that there is a low level of positive relationship between the prices of gold and crude oil during this period. The strong metal prices and the continuous decline of US commercial oil stock companies during this period might be the main reasons for the uptrend of the prices of gold and crude oil.

March 2007

The prices of gold and crude oil for March 2007 are plotted in a graph and presented in the following



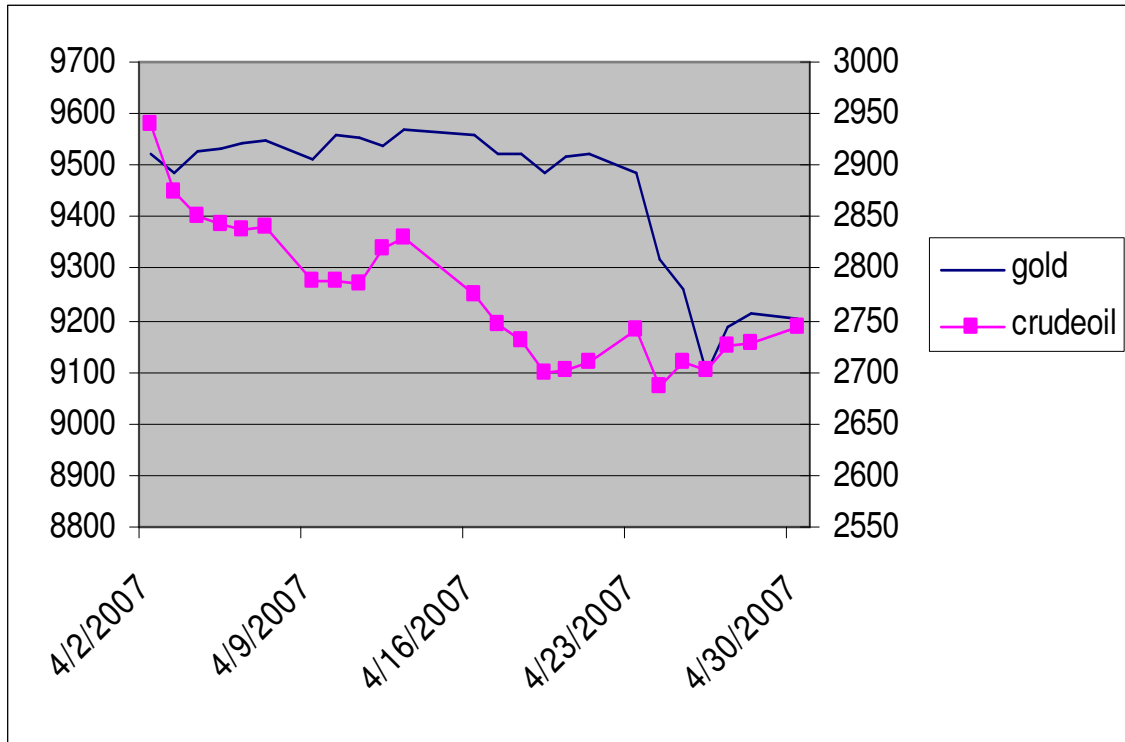


It indicates that the prices of gold and crude oil are in inverse direction but the volatility is very high. The correlation coefficient between the prices of gold and crude oil for the month March 2007 is +0.96. So it is inferred that there is a high level of positive relationship between the prices of gold and crude oil during this period. The optimistic assumption of stock market and stable production of crude oil during this period might be the main reasons for the downtrend of gold and the uptrend of the crude oil.

April 2007

The prices of gold and crude oil for April 2007 are plotted in a graph and presented in the following

Graph – 16
THE GOLD AND CRUDE OIL PRICES FOR APRIL 2007

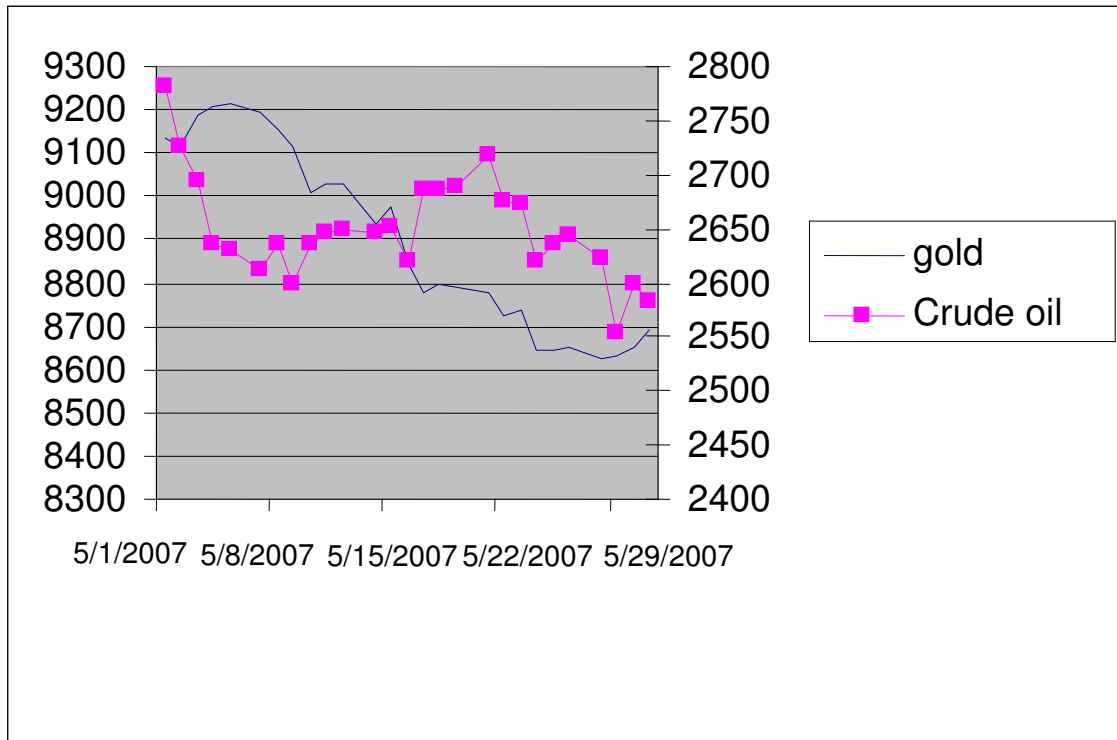


It indicates the downtrend of the prices of gold and crude oil but the volatility is not high. The correlation coefficient between the prices of gold and crude oil for the month April 2007 is + 0.51. So it is inferred that there is a low level of positive relationship between the prices of gold and crude oil during this period. The uptrend of the U.S commercial oil stock company and the debt rate decreased by the agencies during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

May 2007

The prices of gold and crude oil for May 2007 are plotted in a graph and presented in the following

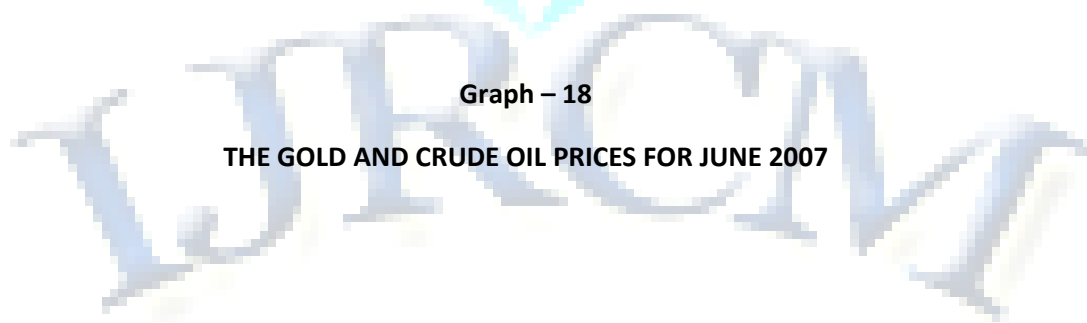
Graph – 17
THE GOLD AND CRUDE OIL PRICES FOR MAY 2007

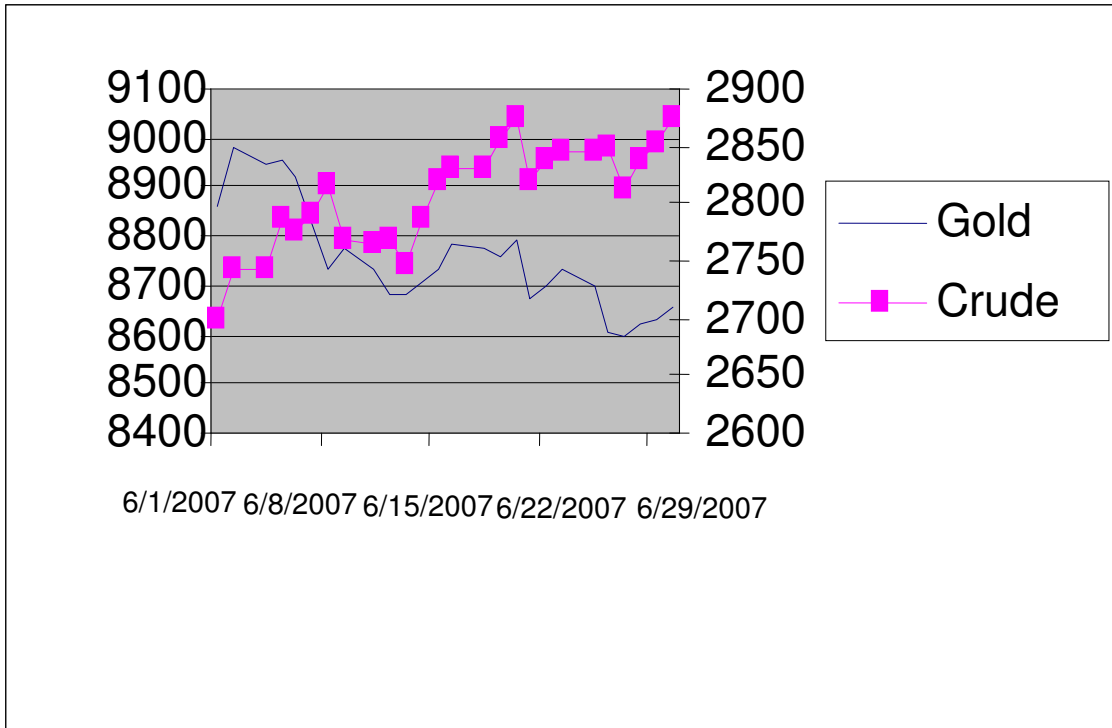


It indicates the downtrend of the prices of gold and crude oil but the volatility is not so high. The correlation coefficient between the prices of gold and crude oil for the month May 2007 is + 0.97. So it is inferred that there is a highly positive relationship between the prices of gold and crude oil during this period. The Geo- political development and the huge supply of crude oil during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

June 2007

The prices of gold and crude oil for June 2007 are plotted in a graph and presented in the following

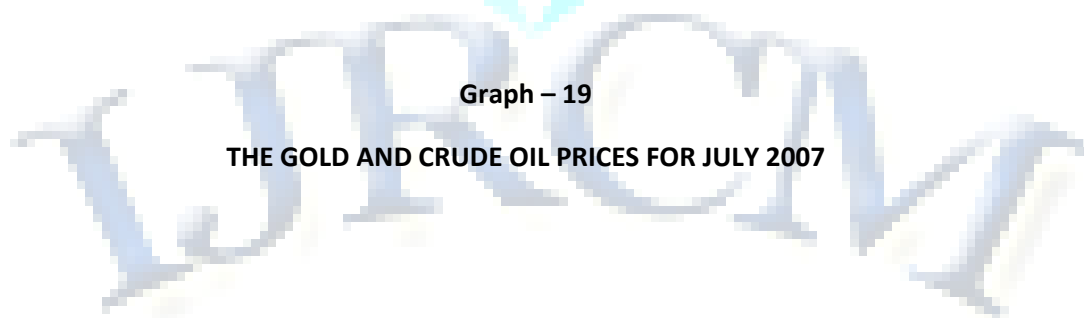


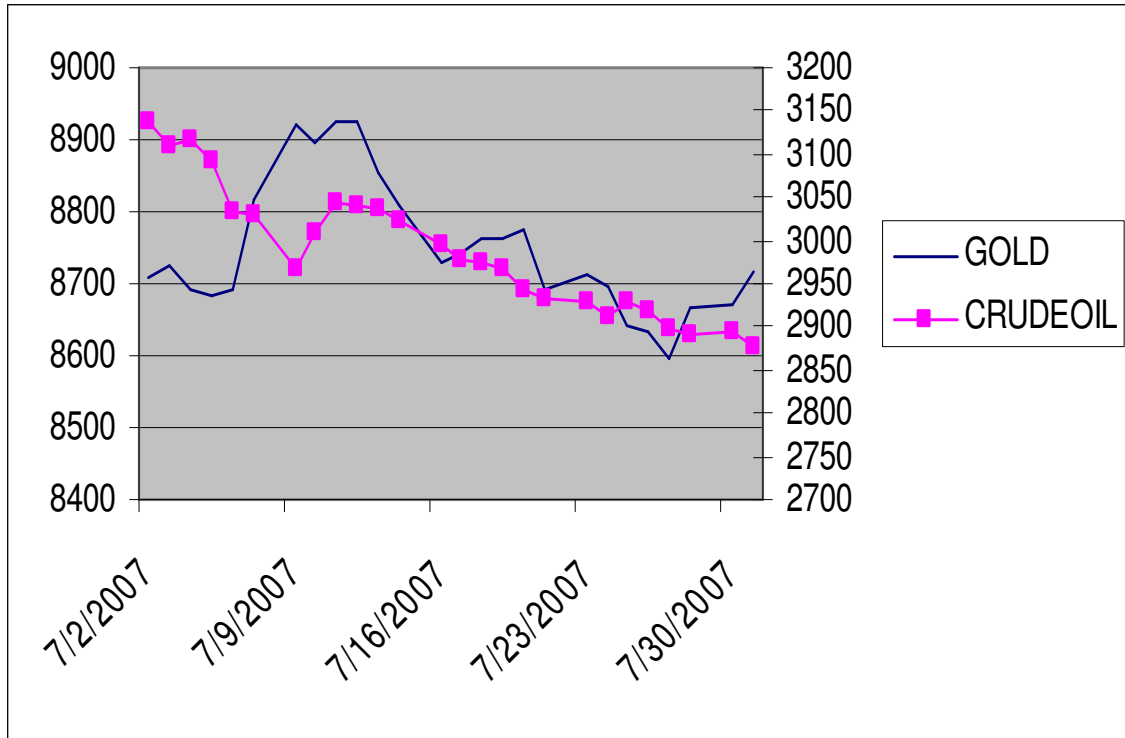


It indicates the prices of gold and crude oil are in inverse direction but the volatility is high the correlation coefficient between the prices of gold and crude oil for the month June 2007 is + 0.95. So it is inferred that there is a high level of positive relationship between the prices of gold and crude oil during this period. The strong Geo-political development and huge import of crude oil by the U.S during this period might be the main reasons for the downtrend of gold and the uptrend of crude oil.

July 2007

The prices of gold and crude oil for July 2007 are plotted in a graph and presented in the following

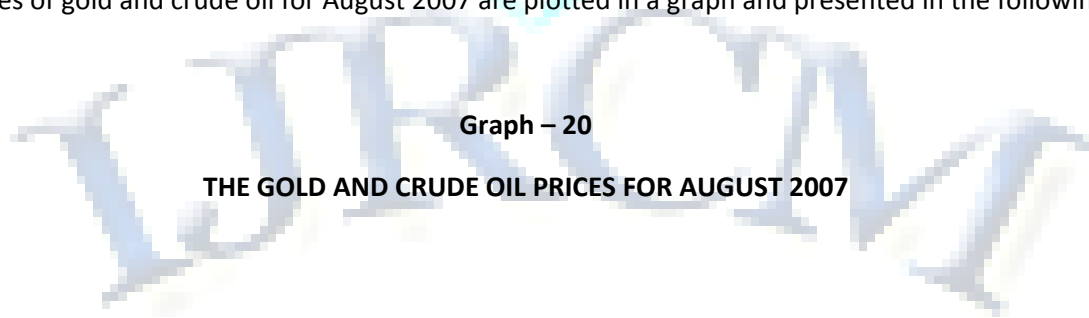




It indicates the downtrend of the prices of gold and crude oil but the price movement of crude was steeply in declining trend. The correlation coefficient between the prices of gold and crude oil for the month July 2007 is + 0.95. So it is inferred that there is a highly positive relationship between the prices of gold and crude oil during this period the bullishness of stock market, Geo-political development and the decline of US crude oil import during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

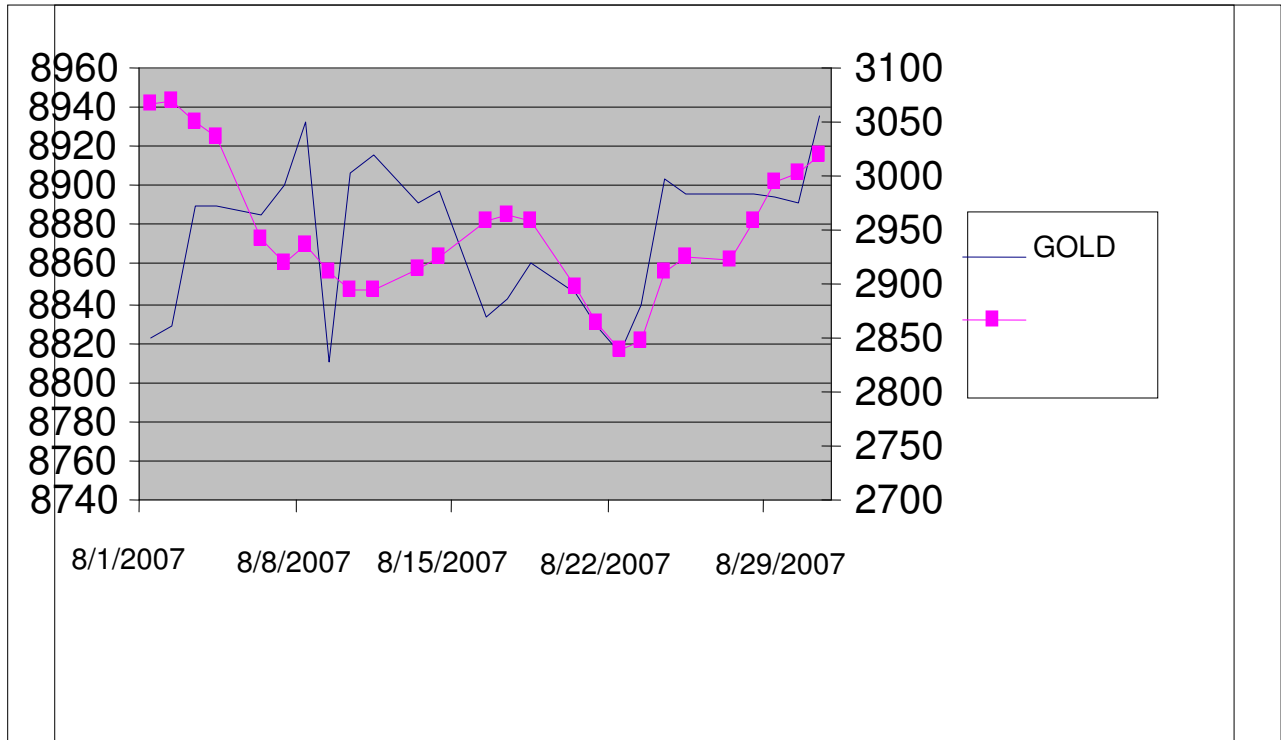
August 2007

The prices of gold and crude oil for August 2007 are plotted in a graph and presented in the following



Graph – 20

THE GOLD AND CRUDE OIL PRICES FOR AUGUST 2007

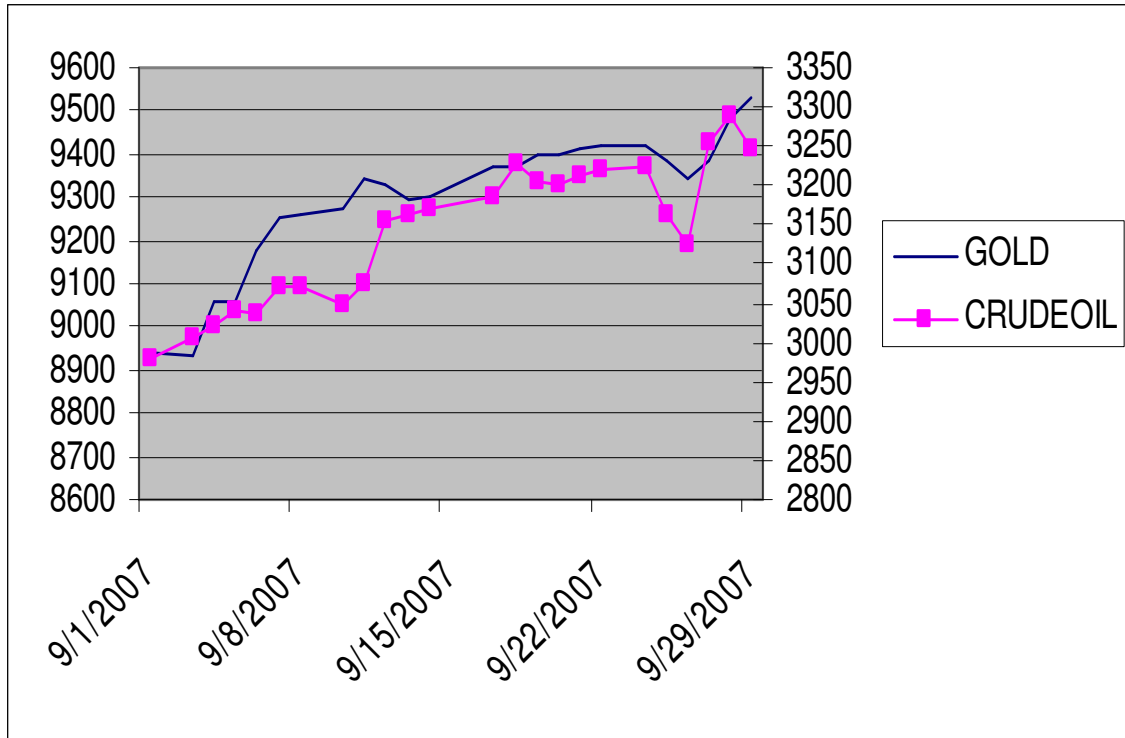


It indicates the uptrend of the prices of gold and crude oil but the volatility is very high. The correlation coefficient between the prices of gold and crude oil for the month August 2007 is + 0.96. So it is inferred that there is a highly positive relationship between the prices of gold and crude oil during this period. The raise in the investment of gold by the institutions and strong US economy during this period might be the main reasons for the uptrend of the prices of gold and crude oil.

September 2007

The prices of gold and crude oil for September 2007 are plotted in a graph and presented in the following

Graph – 21
THE GOLD AND CRUDE OIL PRICES FOR SEPTEMBER 2007

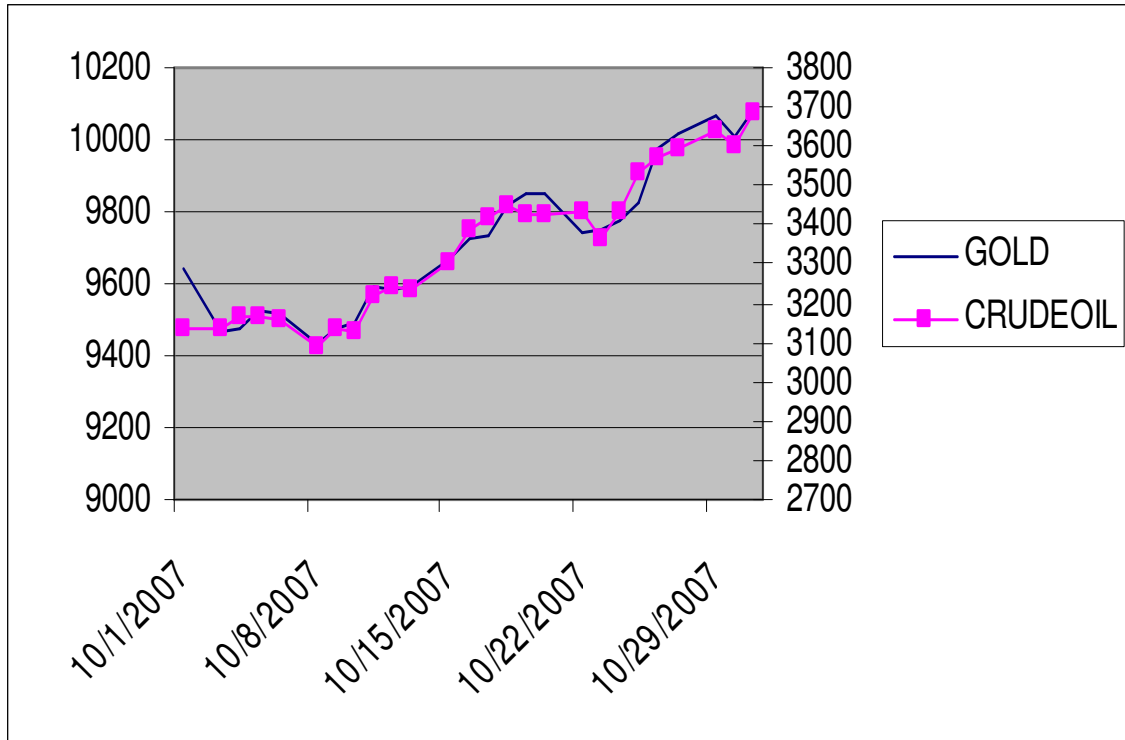


It indicates that prices of gold and crude oil are in uptrend but the volatility was low. The correlation coefficient between the prices of gold and crude oil for the month September 2007 is + 0.88. So it is inferred that there is a medium level of positive relationship between the prices of golden crude oil during this period. The bullishness of stock market and economies and war between the major currencies during this period might be the main reasons for the uptrend of golden crude oil.

October 2007

The prices of gold and crude oil for October 2007 are plotted in a graph and presented in the following

Graph – 22
THE GOLD AND CRUDE OIL PRICES FOR OCTOBER 2007



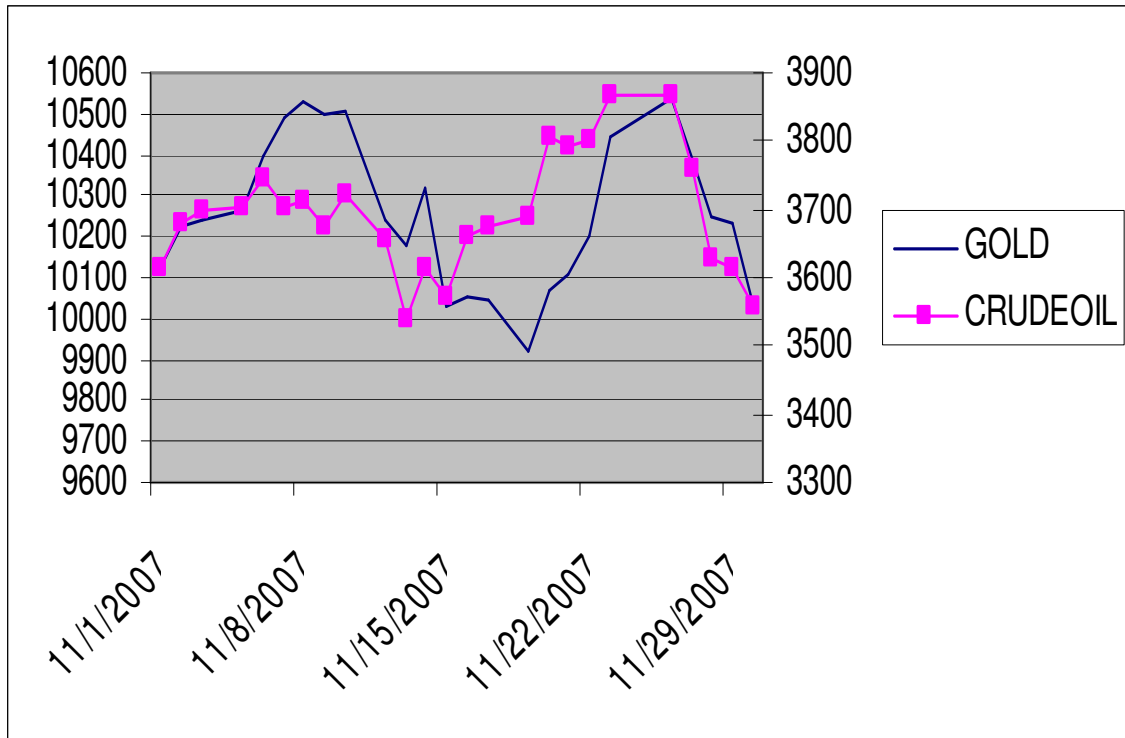
It indicates that the prices of golden crude oil are in uptrend but the volatility was low. The correlation coefficient between the prices of gold and crude oil for the month October 2007 is + 0.94. So it inferred that there is a highly positive relationship between the prices of golden crude oil. The share price raised by the Barrick Gold Corporation and huge import of crude oil by US, Europe and Japan during this period might be the main reasons for the uptrend of the gold and crude oil.

November 2007

The prices of gold and crude oil for November 2007 are plotted in a graph and presented in the following



Graph – 23
THE GOLD AND CRUDE OIL PRICES FOR NOVEMBER 2007

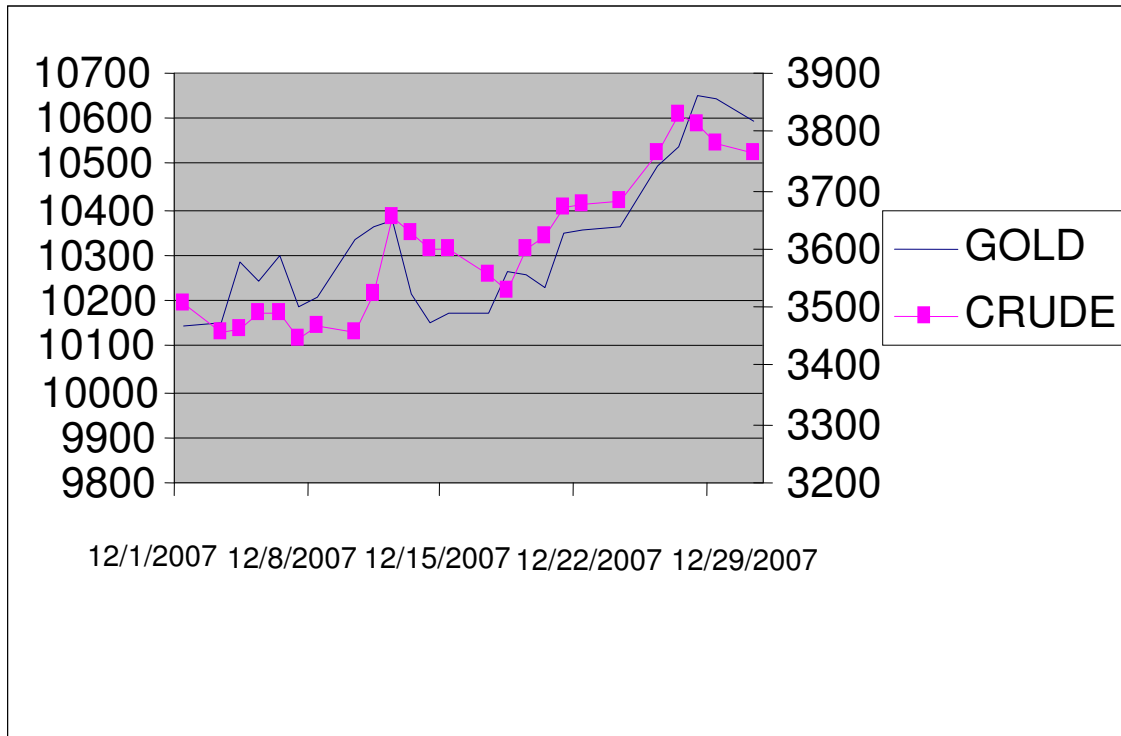


It indicates the downtrend of the prices of gold and crude oil but the volatility is very high. The correlation coefficient between the prices of gold and crude oil for the month November 2007 is + 0.87. So it is inferred that there is a medium level of positive relationship between the prices of gold and crude oil during this period. The Bullishness of stock market and the import of crude oil dropped heavily in US during this period might be the main reasons for the downtrend of the prices of gold and crude oil.

December 2007

The prices of gold and crude oil for December 2007 are plotted in a graph and presented in the following

Graph – 24
The Gold and Crude oil prices for December 2007



It indicates the prices of gold and crude oil are in uptrend but the volatility is high. The correlation coefficient between the prices of gold and crude oil for the month December 2007 is + 0.89. So it is inferred that there is a medium level of positive relationship between the prices of gold and crude oil during this period. The bad Geo-political news and U.S inventories data and the huge investment of developing countries in commodity market especially in Gold and Crude oil during this period might be the main reasons for the uptrend of the prices of gold and crude oil.

FINDINGS

In January 2006, the prices of gold and crude oil were in uptrend but the volatility was high. It could be due to rise in price in gold by 8% by investment bankers and the Oil Petroleum Exporting Countries (OPEC) decreased its oil production during this period.

In February 2006, the prices of gold and crude oil were in down trend but the volatility was higher than the previous month. It could be due to the underperformance of US economy and a slight increase in oil production during this period.

In March 2006, the prices of gold and crude oil were in uptrend but the volatility was lesser than the previous month. It could be due to the continuous decline of US dollar and demand for crude oil increased in USA during this period.

In April 2006, the prices of gold and crude oil were in uptrend but the volatility was lesser than previous month. It could be due to the price target raised by the major gold bankers and a slight decline in US commercial oil companies stocks during this period.

In May 2006, the prices of gold and crude oil were in downtrend but the volatility was higher than the previous month. It could be due to the fluctuation of dollar against the major currencies and globally there was a huge declined in the consumption of crude oil during this period.

- In June 2006, the prices of gold and crude oil were in uptrend but the volatility was similar to previous month. It could be due to the continuous Geo-political tension and declined of stock market during this period.
- In July 2006, the price of gold and crude oil were in downtrend but the volatility was higher the previous month. It could be due to the fluctuation of US dollar and the major currencies during this period.
- In August 2006, the prices of gold and crude oil were in downtrend but the volatility was lesser than the previous month. It could be due to the exploration activities of gold bankers such as acquisition and the lower interest rate of Federal Reserve Bank during this period.
- In September 2006, the price of gold and crude oil were in downtrend but the volatility was similar to the previous month. It could be due to the lowered the outlook of the gold prices by Barrick Gold Corporation and its two subsidiaries and lower oil demand in US during this period.
- In October 2006, the prices of gold were in uptrend and the prices of crude oil were in downtrend but the volatility was higher than the previous month. It could be due to the recovery of major gold mines from weaker position and the huge supply of crude oil during this period.
- In November 2006, the prices of gold and crude oil were in uptrend but the volatility was similar to the previous month. It could be due to the debt rate of gold raised by the agencies and the fluctuation of dollar during this period.
- In December 2006, the prices of gold and crude oil were in downtrend but the volatility was lesser than the previous month. It could be due to the hedging ratio cut by the CITI group and the huge investment in stock market during this period.
- In January 2007, the prices of gold and crude oil were in uptrend but the volatility was lesser than the previous month. The gold had heavy dip till 24th January and recovered. It could be due to the optimistic assumption of metal prices and the huge oil demand in North America during this period.
- In February 2007, the price movements of gold and crude oil were in uptrend but the volatility was higher than the previous month. It could be due to the strong metal price and the continuous decline of US commercial Oil Company stocks during this period.
- In March 2007, the prices of gold were in uptrend and the prices of the crude oil in downtrend but the volatility was similar to the previous month. It could be due to the optimistic assumption of stock market and stable production of crude oil during this period.
- In April 2007, the prices of gold and crude oil were in down trend but the volatility was lesser than the previous month. It could be due to the uptrend of US commercial oil companies stocks and the decreased debt rate of gold by the agencies during this period.
- In May 2007, the prices of gold and crude oil were in downtrend but the volatility was higher than the previous month. It could be due to the Geo-political development and huge supply of crude oil during this period.
- In June 2007, the prices of gold were in down trend and the prices of crude oil were in uptrend but the volatility was similar to the previous month. It could be due to the strong geo political development and huge import of crude oil by US during this period.
- In July 2007, the prices of gold and crude oil were in downtrend but the volatility was lesser than the previous month. It could be due to the bullishness of the stock market and the decline of US crude oil import during this period.
- In August 2007, the prices of gold and crude oil were in uptrend but the volatility was higher than the previous month. It could be due to the raise in investment of gold by the institutions and the strong US economy during this period.
- In September 2007, the prices of gold and crude oil were in uptrend but the volatility was lesser than the previous month. It could be due to the bullishness of the stock market and economies of European countries and the war between the major currencies during this period.

In October 2007, the prices of gold and crude oil were in uptrend but the volatility was lesser than the previous month. It could be due to the share price raised by the Barrick Gold Corporation and huge import of crude oil by the US, Europe and Japan during this period.

In November 2007, the prices of gold and crude oil were in downtrend but the volatility was higher than the previous month. It could be due to the bullishness of the stock market and the import of crude oil dropped by US during this period.

In December 2007, the prices of gold and crude oil were in uptrend but the volatility was lesser than the previous month. It could be due to the huge investment of commodity market especially in gold and crude oil by the developing countries during this period.

SUGGESTIONS FOR THE INVESTORS

The following are some of the suggestions which may help to make the investment decision in gold and crude.

1. If the inflation is higher, it is better to invest in gold. Because better price for gold is possible.
2. If there is any political problem, it is better to invest in gold. Because the institutions normally invest in gold during this time.
3. If there is any Geo-political tension, it is better to invest in gold. Because the investment of gold is the hedge against any stress.
4. If there is any decline in major currencies or any war between major currencies, it is better to invest in gold. Because there is an inverse relationship between the gold and major currencies.
5. If there is any unexpected event happened like earthquake or tsunami, it is better to invest in gold. Because the gold investment agencies may raise the interest rate of gold.
6. If the oil consumption of US is increased, it is the favorable situation for crude oil. Because US is consuming 2Lakh BBL of crude oil per day and the demand of the crude oil is expected to be increased.
7. If the production of crude is decreased by the OPEC it is better to buy crude oil. Because the crude oil prices may shoot up.

The decision of purchase and sale of gold or crude oil should consider other intervening variables for better investment decision because it is very difficult to predict or asses the causes of the impact. Sometimes certain controllable variables will have a sudden impact but certain uncontrollable variables will not reflect on the behavior of the market. So the behavior of the market should be analyzed in all the angles to take a wise investment decision gold and crude.

CONCLUSION

In commodity market most of the time the price moments of gold and crude oil are in the same direction. Therefore, it is better to buy and sell the gold and crude oil simultaneously. So the loss can be minimized in the critical situation. Sometime the prices of gold and crude oil will be in inverse direction. The prices of gold may be in uptrend and crude oil may be in downtrend and vice versa. At that time it is better to invest in the commodity which is in decline trend. It is assumed that the commodity price which is in decline trend will automatically shoot up soon.

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RELATIONSHIP BETWEEN FII, SENSEX AND MARKET CAPITALISATION**GAYATHRI DEVI. R**

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PUDUCHERRY**ABSTRACT**

The investments from most developing countries are not made through the domestic savings alone but are complemented by various investments from abroad. Foreign investments have made a profound impact on the Indian economy. Portfolio investments in India channeled via foreign institutional investors have been the most dynamic source of capital. Hence, it is necessary to study the causal relationship between net FII, stock market and market capitalization. The study has been conducted for a period starting from April 2005 to April 2009 by using Granger Causality Test. The result indicates that there is bi-directional causality between FII and market capitalization. It further states that there is uni-directional causality between FII and return and also between return and market capitalization.

KEYWORDS

Foreign Institutional Investor, Granger Causality test, Unit Root Test.

INTRODUCTION

Until the 1980's India's development strategy was focused on self-reliance and import-substitution. Current account deficits were financed largely through debt flows and official development assistance. There was a general disinclination towards foreign investment or private commercial flows.

The 1990's began with major crises. In the wake of the Gulf war and the consequent expulsion of Indian expatriate labour from the Middle East, foreign exchange remittances fell down. As the balance of payments position deteriorated, a panicked withdrawal of funds deposited in India by Non Resident Indians. As a part of the reforms agreed with the IMF, the rupee was devalued by 20%. The trade regime and the regulatory framework were liberalized and industrial licensing was abolished in all. Foreign investment was invited in a wide range of industries, including consumer goods. The Government dropped its insistence that foreign equity participation provide specific benefits in terms of technology transfer or export earnings. The limit on foreign equity participation was raised to 51% for most industries and even 100% in some cases.

Foreign investment was especially sought in the infrastructure sector previously monopolized by state enterprises, i.e power generation, highway and port construction, telecommunications, oil and natural gas exploration, etc. and the services sector, where foreign capital had been gradually eliminated as a matter of deliberate policy was reopened to foreign investors. They were invited to invest in financial services, retail banking, life and general insurance. Restrictions on the use of international brand names were removed. Reforms in the technology policy have provided greater recognition of intellectual property rights. This liberalization coincided with growing interest in emerging markets especially among the global pension funds. In a major break from the past, foreign institutional investors were allowed to make portfolio investments in Indian companies, subject to overall limits on ownership within each firm (Kumar 2002).

FOREIGN INSTITUTIONAL INVESTMENT

With the ongoing globalization, the role of foreign institutional investors in foreign capital flows has increased to a great extent. They are regarded as kingpins of financial globalization. The developing countries have a chronic shortage of capital which is supplemented by the FIIs. The increased participation by foreign investors increases the potentially available capital for investment and thus lowers the cost of capital. The purchases of FIIs give an upward thrust to domestic stock prices and thus increase the price-earning ratio of firms, leading to an overall level of investment in an economy.

Portfolio investment is expected to improve the functioning of domestic stock exchange. The host country seeking foreign portfolio investment has to improve its trading and delivery system. Consistent and business friendly policies have to be followed in order to retain the confidence of foreign investors. These factors catalyze the development of domestic stock exchange which will be benefited by the domestic investors as well (Rao, Murthi and Rangarajan, 1999). Portfolio investors have access to advanced technology, best possible information and vast and global experience in investment business. Due to these qualities, the entry of FIIs can substantially increase the allocative efficiency of domestic stock market.

In an increasingly complex scenario of the financial world, it is of paramount importance for the researchers and policy makers, to know the scenario of economic and financial system to achieve the regulatory goals of stability and efficiency of the system. Keeping this in view, this study examines the relationship between stock market, market capitalization and net FII investment in India. It also tries to analyze the impact of market capitalization and net FII investment on the stock market in India.

This paper aims to examine whether there is any causal relationship between the Net FII, BSE Sensex and the Market Capitalization for the period April 2005 to April 2009.

REVIEW OF LITERATURE

Using a monthly data-set for the period May 1993 to December 1999, Chakrabarti (2001) finds that the FII net inflows were not only correlated with the return in Indian equity market but was more likely the effect than the cause of the Indian equity market return.

Batra (2003) uses daily data on FII equity purchases and sales and equity returns between January 2000 - December 2002 on the BSE sensex and monthly data from January 1994 to December 2002. He examines three issues, firstly if trading by FIIs reveals any trends of positive feed back trading (he finds strong evidence of positive feedback strategy followed by FIIs on a daily basis whereas no evidence on a monthly basis). Secondly, if there is evidence of herding by the FIIs (He indicates that foreign investors have a tendency to herd on the Indian equity market even though not on the same day. In times of pressure in the stock market, there is excessive selling side herding). And lastly the destabilizing impact, if any, of the FII trading strategies on stock prices in India.

Kulwant Rai and N. R. Bhanumurthy in their paper, "Determinants of Foreign Institutional Investment in India: The role of Return, Risk and Inflation" tries to examine the determinants of Foreign Institutional Investments in India. They found that FII inflow depends on stock market returns, inflation rate (both domestic and foreign) and ex-ante risk.

Suchismita Bose and Dipankor Coondoo (2004) tried to find the impact of the FII Regulations in India in their work, "The Impact of FII Regulations in India: A Time-Series Intervention Analysis of Equity Flows", during the period January 1999 to January 2004, through a multivariate GARCH regression model. Their results strongly suggest that liberalization policies have had the desired expansionary effect and have either increased the mean level of FII inflows and/or the sensitivity of these flows to a change in BSE return and/or the inertia of these flows.

Basabi bhattacharya & Jaydeep mukherjee (2006) in their paper "An Analysis of Stock Market Efficiency in the Light of Capital Inflows and Exchange Rate Movements: The Indian Context" tries to determine the lead and lag interrelationships between the Indian stock market, net foreign institutional investment, and exchange rate. To test this, they employed Granger non-causality for the sample period January 1993 to March 2005. The result suggests a bi-directional causality between stock price and the net foreign institutional investment, an uni-directional causality from change in exchange rate to stock returns (at 10% level of significance) and the absence of any causal relationship between exchange rate and net investment by FIIs.

Duk Ahm Kong and S. Sakthivel (2004) in their work "A Study on Foreign Investment in India since 1990s" tried to analyze the trend and pattern of foreign investment in the country in the pre and post liberalization period. Secondly, they examined the spread/concentration of foreign investment in the different regions of India. Thirdly, they identified the major source of countries from which foreign investment flow into India. Finally, they tried to assess the vital sectors that attract foreign investment into India.

Indrani Chakraborty (2001) in his study, "Economic Reforms, Capital Inflows and Macro Economic Impact in India", attempts to explain the effects of inflows of private foreign capital on some major macroeconomic variables in India using quarterly data for the period 1993-99. The analyses of trends in private foreign capital inflows and some other variables indicate instability. Co integration test confirms the presence of long-run equilibrium relationships between a few pairs of variables. Granger Causality

Test shows unidirectional causality from FINV to nominal effective exchange rates- both trade-based and export-based-, which raises concern about the RBI strategy in the foreign exchange market. Finally, instability in the trend of foreign currency assets could be partially explained by the instability in FINV with some lagged effect.

Merton shows that the expected return in the market with unrestricted investor base is higher than restricted investor base. The entry of foreign investors in the stock market broadens the investor base, which increases diversification and risk sharing, lowering the risk premium for country specific volatility.

N P Tripathy studied the dynamic relationship between stock market, market capitalization and net FII investment in India during the period from June 2002 to June 2005 by using Granger Causality Test and Vector Auto Regression Model. The result indicates that there is a unidirectional causal relationship between market capitalization and stock market, net FII investment with stock market. Again the VAR analysis shows that stock return and market capitalization have an impact over net FII investment in the expected direction over a short horizon.

METHODOLOGY

DATA

The data used in our study comprises the monthly data of the net Foreign Institutional Investors, BSE Sensex and the Market Capitalization. The monthly data have been collected from the SEBI Bulletin for a period of 4 years from April 2005 to April 2009. The data for the BSE Sensex has been taken from the website of the Bombay Stock Exchange. Net FII Investment in Rupees is used in our study. The rationale behind choosing the market capitalization is that, returns only incorporate the price changes, whereas market capitalization takes into consideration not only price changes but volume of trading as well.

DATA ANALYSIS

UNIT ROOT TEST

Time series data, especially data relating to financial variables exhibit a trend pattern. Therefore, it is necessary to detrend the data so as to apply further test on it. A variable that is being de-trended is said to be stationary series. The two test namely Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests are used. When Augmented Dickey Fuller test is taken into consideration we use lagged values of the variable itself whereas Phillip Perron test uses residuals from Dickey Fuller Regression.

GRANGER CAUSALITY TEST

The dynamic linkage is examined using the concept of Granger's Causality Test. Testing causal relationship between two stationary series X_t and Y_t , can be based on the following two equations.

$$X_t = \alpha + \sum_{j=1}^k \beta_j x_{t-j} + \sum_{j=1}^K \lambda_j y_{t-j} + U_{xt}$$

$$Y_t = \mu + \sum_{j=1}^k \delta_j X_{t-j} + \sum_{j=1}^K \phi_j Y_{t-j} + U_{yt}$$

Where, k is a suitably chosen positive integer, γ_j and $\beta_j, j = 0, 1, \dots, k$ are parameters and α 's are constants, and U_t 's are disturbance terms with zero means and finite variance. The null hypothesis that Y_t does not Granger-cause X_t is not accepted if the $\beta_j, j > 0$ in the above first equation are jointly different from zero using a standard joint test. Similarly, X_t Granger causes Y_t , if the γ_j 's are $j > 0$, coefficients in the above second equation are jointly different from zero.

EMPIRICAL ANALYSIS

The analysis part consists of a general descriptive statistics followed by a unit root testing comprising of ADF and PP tests and finally by the causality testing. The unit root test confirms that the data are stationary, hence Granger Causality test is conducted on the data.

Table 1: Descriptive Statistics

	Net FII	BSE Sensex	Market Capitalisation
Mean	0.000759	0.010016	15.05157
Median	0.000783	0.029052	15.03062
Maximum	0.004682	0.193071	15.78541
Minimum	-0.00323	-0.278871	14.30762
Std. Dev.	0.001849	0.080225	0.361594
Skewness	0.11236	-1.085869	0.024876
Kurtosis	2.56173	5.331929	2.346423
Jarque-Bera	0.495267	20.73178	0.877179
Probability	0.780646	0.000031	0.644945
Observations	49	49	49

The BSE return is negatively skewed but the FII and the MC are positively skewed. Net FII and MC are leptokurtic but BSE return is mesokurtic. The Jarque-Bera test shows that the JB statistics is about 0.495267, 20.73178 and 0.877179 for BSE, FII and MC. As the values of JB statistics is very high, we do not reject the null hypothesis, in other words, the residuals are normally distributed. Hence there is no heteroskedasticity.

Table 2: Pair-wise Granger Causality Tests between Net FII, BSE Sensex and MC

Null Hypothesis:	Obs	F-Statistic	Probability
LR does not Granger Cause SFII	48	0.08113	0.77707
SFII does not Granger Cause LR		7.57652*	0.0085
LMC does not Granger Cause SFII	48	4.98588*	0.03057
SFII does not Granger Cause LMC		2.45697*	0.12401
LMC does not Granger Cause LR	48	3.21234*	0.07981
LR does not Granger Cause LMC		0.09526	0.75902

* and ** statistically significant at 1% and 5% level respectively.

The above table shows the Granger Causality Test results which concerns with examining the impact of FII investment on stock market. The reported F-values and P-values suggest that there is bi-directional causality between FII and market capitalization. It further states that there is uni-directional causality between FII and return and also between return and market capitalization. In other words, any change in FII will influence MC and vice versa. Whereas any change in return will not influence FII but change in FII will definitely influence return i.e, FIIs entry into the stock market is not due to the change in stock return. Similarly any change in MC will not influence return whereas change in return will influence MC.

SUMMARY AND CONCLUSION

In this paper we examined the causal relationship between FII inflows and stock market returns in Indian economy. The issue assumes relevance in light of the mixed results reported earlier for time periods when the quantum of inflows was substantially less, compared to the recent times. Granger causality test reveals that there is bi-directional causality between FII and market capitalization. It further states that there is uni-directional causality between FII and return and also between return and market capitalization.

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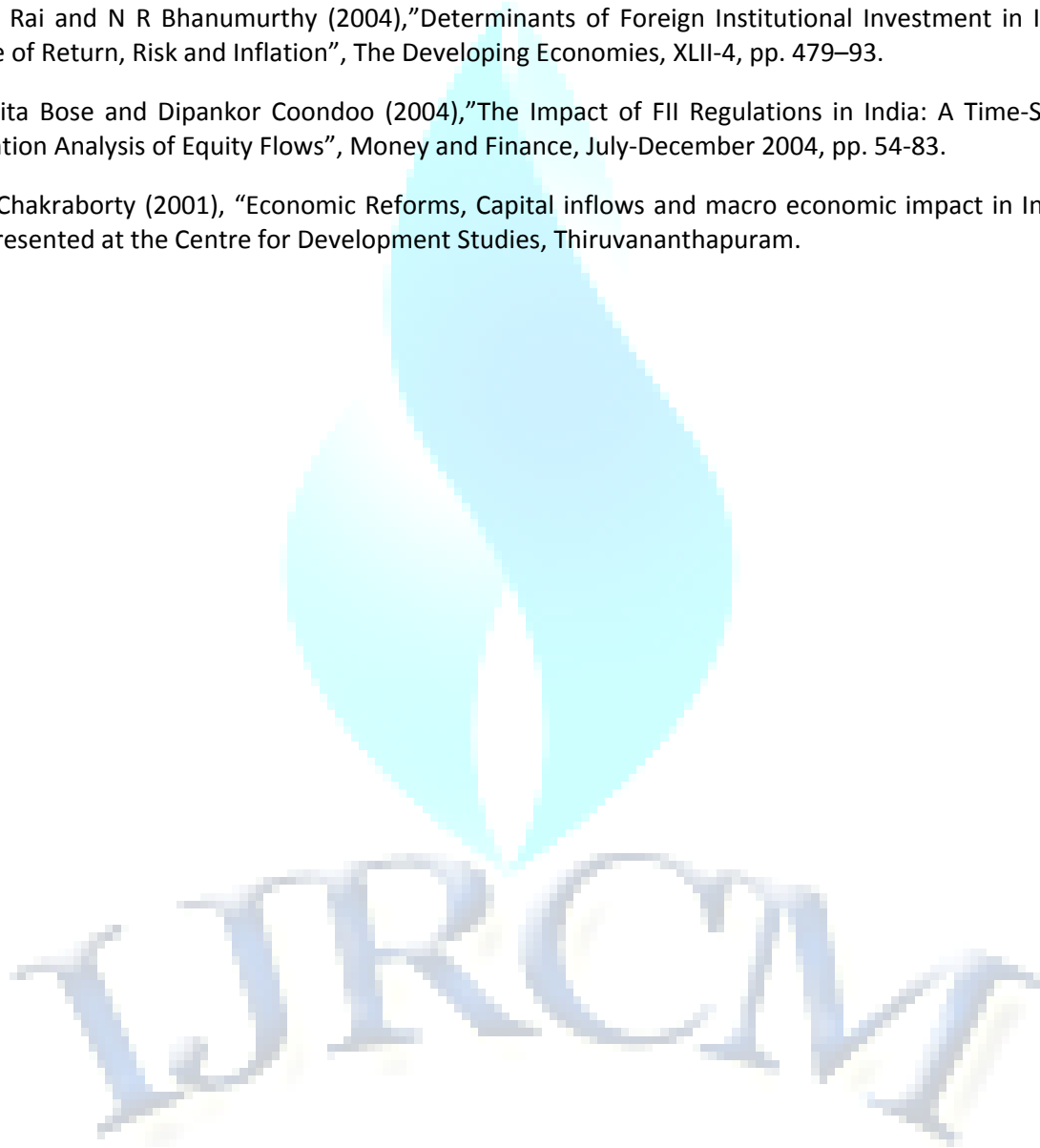
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A NOVEL INDEPENDENT COMPONENT ANALYSIS APPROACH FOR BANKRUPTCY PREDICTION USING NEURO-FUZZY NETWORKS

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ABSTRACT

The aim of this research is to model the dependency of enterprises on their financial ratios for predicting bankruptcy using artificial neural networks combined with fuzzy logic. The data used in this study has been extracted from the financial reports of ongoing and failed enterprises for past five years. Independent Component Analysis has been applied on the input dataset comprising of financial ratios to choose the most significant ratios to be considered as input to the neuro-fuzzy network. Around 2012 subsets of input vectors, each containing five variables were used for training and around 51 were used for testing the network's performance. In this way the model predicts the bankruptcy status of the enterprises with minimal training errors. A rule-base consisting of fuzzy rules of the network is formed, which is used for the linguistic diagnosis of failure or financial problems of the enterprises.

The proposed model can be used by banks as a loan approval system. In other words, it can serve as a screening model for commercial loans for loan examination and loan review. It can also be used by the managers of the enterprises to take preventive measures to deal with financial crises.

KEYWORDS

Bankruptcy, Financial ratios, Independent Component Analysis, Neuro-fuzzy Network, Prediction.

INTRODUCTION

Bankruptcy prediction has been an active research field in finance since 40 years. The problem of timely and correctly predicting bankruptcy is of great importance for financial institutions. A number of groups including investors, auditors, creditors and employees are affected by corporate failure and hence are interested in accurate forecasts regarding the financial strength of companies. Prediction of bankruptcy has dual benefits. If bankruptcy can be predicted with sensible accuracy well in advance, it not only can help the companies to take preventive measures, but also may help bank authorities for approving/disapproving loans. Once the loan is approved, one of the important issues for the bank is that whether the debtor company will become bankrupt or not. This again gives rise to the need of a system with an early warning facility to predict the chances of bankruptcy for the borrowing company.

Bankruptcy for a company is a final declaration of its inability to sustain current operations given its current debt obligations. According to financial theories, a financial ratio is a ratio of chosen numerical quantities picked up from the financial statements of a company. A large number of standardized financial ratios are utilized for the assessment of the financial state of a company. The financial ratios are applied by the probable and present shareholders of a company, the creditors of a company and the managers of a company. Bankruptcy prediction may help the investors avoid huge economic loss. Financial ratios are also used by security analysts for the purpose of comparison between the positives and negatives of different firms. The main impact of such research is in bank lending. Banks need to predict the possibility of default of a potential counterparty before they extend a loan.

Hybrid neural networks have been applied by many researchers in business classification problems. In this paper, an Adaptive Network-based Fuzzy Inference System (ANFIS) proposed by Roger Jang [7] is used to predict the possibility of business failure. The rest of the paper is organized as follows. Section II reviews prior literature on bankruptcy and Neural Networks. Section III explains data and sample selection. Section IV presents the methodology used and discusses test results. Finally, Section V summarizes findings and conclusion of this study.

A REVIEW OF BANKRUPTCY PREDICTION

The first study in this area was done by Smith and Winakor in the Great Depression era 1935, followed by Merwin 1942 who showed that failing firms exhibit significantly different ratios than successful firms do. The most acceptable model of bankruptcy prediction, the Z-score model developed by Altman, came in the late 60's [2]. The five variable Z-score model using multiple discrimination analysis showed very strong predictive power. Since mid 1980's, neural networks have become the dominant research area in artificial intelligence and researchers have actively applied neural networks to classification problems including bankruptcy prediction. Shin & Lee, 2002 [7], apply a genetic algorithm for extracting meaningful rules for bankruptcy prediction. In their study, they also refer to numerous other artificial applications in bankruptcy. They use nine financial ratios to describe each of their 528 manufacturing cases, but the genetic algorithm based model for prediction uses finally only five of them. Accuracy ranges between 76 and 85% for this promising technique. Kim & Han, 2003, also use genetic algorithm based data mining for discovering bankruptcy decision rules from experts' qualitative decisions. The authors used 772 Korean cases to define six qualitative factors for describing the cases.

Tam and Kiang [5], [6] considered the problem of bank failure prediction. They compared between several methods: MDA, LR, K-nearest neighbor, ID3 classification algorithm, single-layer network, and multilayer network. For the case of one-year-ahead, the multilayer network was the best, while for the case of two-year-ahead, LR was the best. When they used a leave-one-out procedure instead of a hold-out sample, the multilayer network was the clear winner. KNN and ID3 were almost always inferior to

the other methods. Kerling and Poddig [8] compared NN with MDA for a database of French firms for a three-year-ahead forecast. The NN achieved prediction accuracy in the range of 85.3–87.7% compared to 85.7% for MDA. Back et al. [3] propose the use of genetic algorithms for input selection, to be used in conjunction with multilayer networks. They applied their method to data covering the periods one to three years before the bankruptcy, where it obtains significant improvement over MDA.

Fan and Palani swami [1] propose the use of support vector machines (SVMs) for predicting bankruptcies among Australian firms, and compared it with NN, MDA and learning vector quantization (LVQ). SVM obtained the best results 70.35%–70.90% accuracy depending on the number of inputs. Yang et al. [10] used probabilistic NNs (PNNs), which essentially implement the Bayes classification rule. They tested it on firms in the oil sector. The results were mixed, PNN tied with the multilayer networks, but with a particular preprocessing step MDA was the best.

Salcedo-Salcedo-Sanz et al. [9], 2005 proposed genetic programming for the prediction of possible bankruptcy of the insurance companies. The sample comprises of 72 Spanish insurance firms equally balanced between bankrupt and non-bankrupt ones, and 21 financial ratios are used to describe the data. Not all the ratios are used by the genetic programming approach to form the decision model, while accuracy is promising. Comparisons are made with rough sets approaches.

BANKRUPTCY DATA DESCRIPTION

The data used in this study comprise of the financial ratios of various enterprises which consist of both failed & financially distressed firms and non-failed & financially contented firms. Independent Component Analysis is carried out on the 10 ratios and as a result around 5 were selected to be used as input to the next stage. The meaning of input variables is shown in table 1.

Table 1: Initial Input Ratios List

Ratio	Meaning
R 1	Quick Ratio
R 2	Current Ratio
R 3	EBIT/Total Assets
R 4	Total Assets Turnover Ratio
R 5	Retained Earning/Total Sales
R 6	Return on Capital Employed
R 7	Current Assets/Total Sales
R 8	Inventory Turnover Ratio
R 9	Debt equity Ratio
R 10	Operating profit Margin

Through the research of many years neural network has been found to perform well in business classifications including bankruptcy prediction but it fails to explain the relationship among the input variables. On the other hand, in reality all the inputs to the neural network cannot be always measured precisely. Hence, an approach consisting of neural network with fuzzy inputs is used here to solve the problem in hand.

INDEPENDENT COMPONENT ANALYSIS

The goal of ICA is to recover independent sources by de-correlating inputs and thereby reducing higher-order statistical dependencies, attempting to make inputs as independent as possible. ICA uses a preprocessing technique called whitening which linearly transforms vector X to vector $V = UX$ such that its elements v_i are mutually uncorrelated and have unit variance. Thus, the correlation matrix of V equals unity. This not only reduces the dimensionality of the data by finding out independent components from set of input vectors but also has the effect of reducing noise. Fig. 1 shows the graphical representation of input dataset used for ICA:

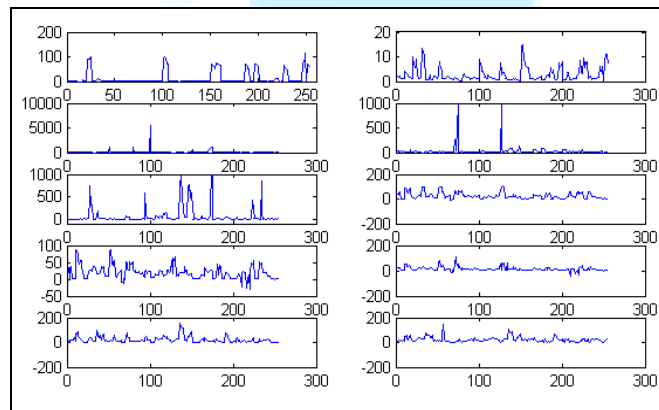


Fig. 1. Input Ratio Dataset for ICA

As seen from fig. 2, set of 5 ratios namely EBIT/Total Assets, Total Assets Turnover Ratio, Retained Earning/Total Sales, Return on Capital Employed, Debt equity Ratio are found to significantly vary independent of other ratios and hence are ready to be taken as input to ANFIS.

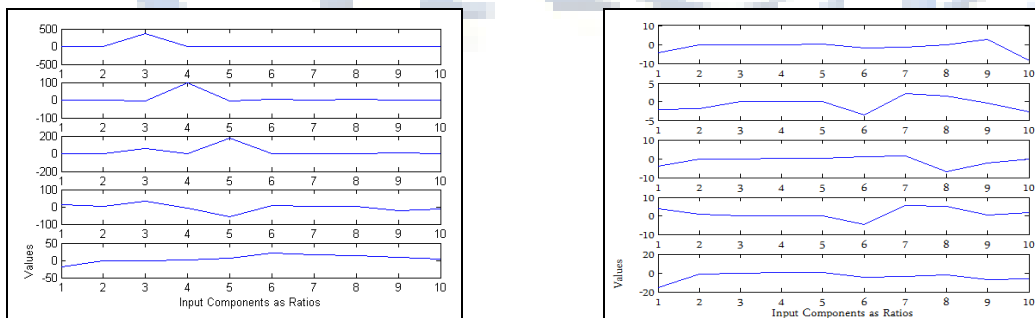


Fig. 2. (a) Filtered Ratio data for First 5 Components

Fig. 2. (b) Filtered Ratio data for Next 5 Components

ADAPTIVE NEURO-FUZZY INFERENCE SYSTEM

Hybrid systems have proved to provide effectiveness in a wide variety of real world problems. While neural networks are good at recognizing patterns, they are not good at explaining how they reach their decisions. Fuzzy logic systems, which can reason with imprecise information, are good at explaining their decisions but they cannot automatically acquire the rules they use to make those decisions. These limitations have been a central driving force behind the creation of intelligent hybrid systems where two or more techniques are combined in a manner that overcomes the limitations of individual techniques.

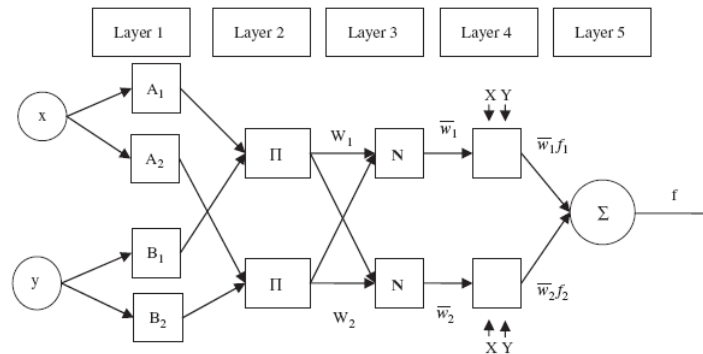


Fig. 3. The Architecture of ANFIS Network

To enable a system to deal with cognitive uncertainties in a manner more like humans, the concept of fuzzy logic is incorporated into the neural networks. As suggested by Roger Jang in 1993, Adaptive Neuro-Fuzzy Inference System can serve as a basis for constructing a set of if-then rules with proper membership functions to generate input-output pairs. A basic fuzzy inference system consists of 5 layers as shown in fig. 3.

The node in the i^{th} position of the k^{th} layer is denoted as $O_{k,i}$, and the node functions in the same layer are of the same function family as described below:

Layer 1: This layer is the input layer, and every node i in this layer is a square node with a node function. $O_{1,i}$ is the membership function of A_i , and it specifies the degree to which the given x satisfies the quantifier A_i . Usually, we select the bell-shaped membership function as the input membership function, with maximum equal to 1 and minimum equal to 0.

$$O_{1,i} = \mu A_i(x) \quad \text{for } i=1,2,\dots \tag{1}$$

where,

$$\mu A_i(x) = \frac{1}{1 + \left[\left(\frac{x - c_i}{a_i} \right)^2 \right]^{bi}}$$

where a_i , b_i and c_i are the parameters, b is a positive value and c denotes the center of the curve.

Layer 2: Every node in this layer is a square node labeled P which multiplies the incoming signals and sends the product out by eq (2):

$$O_{2,i} = W_i = \mu A_i(x) \times \mu B_i(y) \quad \text{for } i=1,2,\dots \quad (2)$$

Layer 3: Every node in this layer is a square node labeled N. The i^{th} node calculates the ratio of the i^{th} rule's firing strength to the sum of all rules' firing strengths by the eq (3). Output of this layer can be called normalized firing strengths.

$$O_{3,i} = \bar{W}_i = \frac{W_i}{W_1 + W_2} \quad \text{for } i=1,2,\dots \quad (3)$$

Layer 4: Every node i in this layer is a square node with a node function as seen from eq (4). Parameters in this layer will be referred to as consequent parameters.

$$O_{4,i} = \bar{W}_i f_i = \bar{W}_i (p_i + q_i + r_i) \quad (4)$$

where p_i , q_i and r_i are the parameters.

Layer 5: The single node in this layer is a circle node labeled P that computes the overall output as the summation of all incoming signals refer eq (5).

$$O_{5,i} = \sum \bar{W}_i f_i = \frac{\sum \bar{W}_i f_i}{\sum W_i} \quad (5)$$

EXPERIMENTS AND RESULTS

The input ratio data is divided into two sets using the 80-20 rule, one for training data to make the model ready and test data to check the validity of the model. Validation data is used to test the data not utilized to develop the model. Initially the input variables were composed of 10 financial ratios of the last 5 years for training and testing. Independent Component Analysis has been applied on these ratios to choose the most appropriate ratios to be considered as input to the neuro-fuzzy network. Fuzzy logic Toolbox of MATLAB is used develop the ANFIS model with 5 inputs and single output as shown in fig.4. Membership function 'gbell' is selected because of their smoothness and concise notation and these curves have the advantage of being smooth and non-zero at all points.

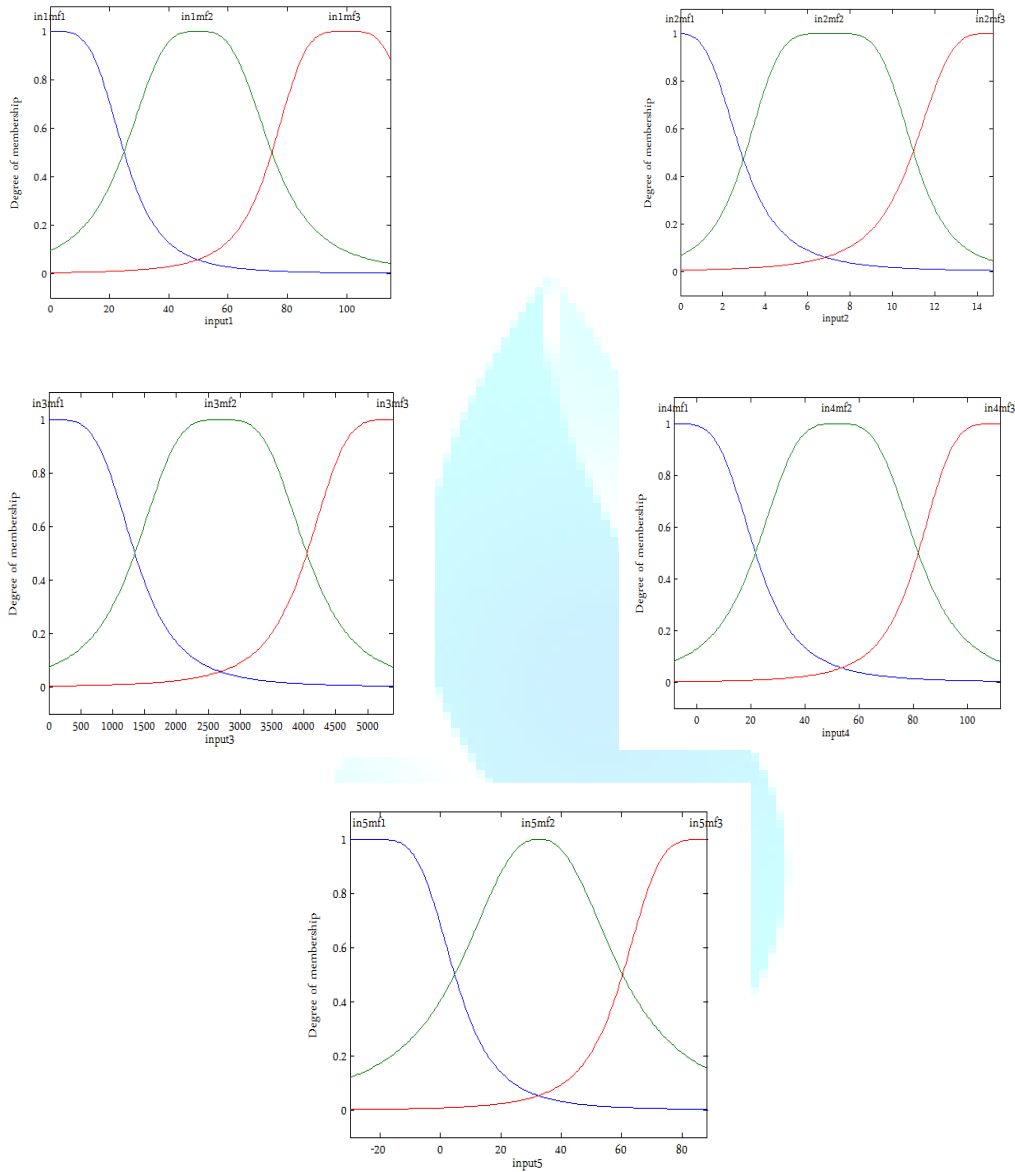


Fig. 4. Input Membership Function for Training Data

MATLAB has been used to model the Bankruptcy prediction and the corresponding five layered ANFIS structure is shown in fig. 5(a). The output is either 1 or 0 to depict whether the firm under consideration is going to be bankrupt or not.

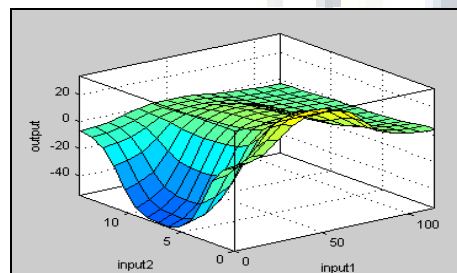
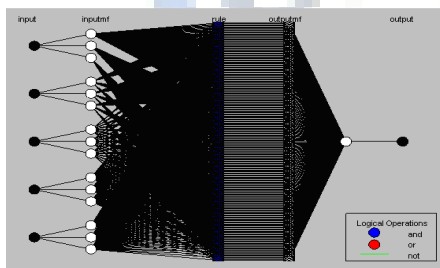


Fig. 5. (a) ANFIS Structure

Fig. 5. (b) Error Surface for ANFIS

Fig. 5(b) shows the non-linear error surface of Sugeno fuzzy model. The fuzzy inference system model converges either when the stopping criterion is reached to forecast T (t+1) for the target testing data set or the RMSE value is calculated in testing data sets using the formula:

$$RMSE = \sqrt{\frac{\sum_{t=1}^n |actual(t) - forecast(t)|^2}{n}}$$

CONCLUSION

The model has proposed a new line of predictive methodology considering various factors as determinants and causes of bankruptcy of a firm. A neuro-fuzzy network is provided 5 inputs with a set of rules to predict the nature of the firm. The proposed model of is new in financial science. It differs from both, traditional MDA and Logit models and more recent simple neuro-fuzzy models in combination with ICA. Evolutionary neural network-based methodologies have been used by many authors, in a variety of application domains with diverse complexity and characteristics, including but not limited to, financial decision support, credit risk management, medical decision making and modeling of fault diagnosis in engineering applications. The application of ANFIS is found to be much more efficient and less complicated as compared to other techniques. The non-linear nature of financial figures can be reasonably handled in the proposed model. ANFIS shows good learning and predicting capabilities while dealing effectively with uncertainty. Hence such a model can be used by bankers, lenders and other stakeholders of the enterprises to predict the enterprise's bankruptcy and thereby can be helpful in lending decisions.

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CHALLENGES FOR IFRS IMPLIMENTATIONS IN INDIA - AN ACCOUNTING REVOLUTION

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ABSTRACT

International Financial Reporting Standards (IFRS) adopted by International Accounting Standards Board (IASB) is a standardized format of financial reporting that is gaining momentum world wide and is a single consistent accounting framework and is likely to become predominant GAAP in times to come. IFRS was developed in the year 2001 by the International Accounting Standard Board (IASB) in the public interest to provide a single set of high quality, understandable and uniform accounting standards. More than 12,000 companies in almost 100 nations have adopted IFRS, including listed companies in the European Union. Other countries, including Canada and India, are expected to transition to IFRS by 2011. The present paper makes an attempt to understand the various beneficiaries by adopting IFRS, the challenges faced by India in adopting the same and the likely risks in introducing IFRS. The paper also makes an attempt to analyze the requirements for successful implementation of IFRS in India.

KEY WORDS

IFRS, adoption, accounting framework, IASB, ASB, Consideration, Convergence, Complexity, Categorization, Project Management, Access, Design, Implementation

INTRODUCTION

IFRS is an accounting framework that establishes recognition, measurement, presentation and disclosure requirements relating to transactions and events that are reflected in the financial statements. IFRS was developed in the year 2001 by the International Accounting Standards Board (IASB) in the public interest to provide a single set of high quality, understandable and uniform accounting standards.

NEED FOR UNIVERSAL GAAP

In recent times, capital markets have become global and continue to expand. Moreover, there has been significant globalization of production and trade. Investors can trade shares and securities worldwide. Entities are in a position to access the funds globally in the most advantageous markets. For this, investors from all over the world rely upon financial statements before taking decisions. They need to be convinced that the financial statements are true and fair and what they understand from the statements is what the person preparing them intends to convey.

However, different countries adopt different accounting treatments and disclosure patterns with respect to the same economic event. This may create confusion among the users while interpreting the financial statements. Financial statements that are based on a single, universally accepted and used GAAP will enable the world to exchange financial information in a meaningful and trustworthy manner. This will accelerate the globalization of finance.

ADOPTION OF IFRS WORLDWIDE AND IN INDIA

The use of International Financial Reporting Standards (IFRS) as a universal financial reporting language is gaining momentum across the globe. Several countries have implemented IFRS and converged their national GAAP to IFRS. More than 100 countries throughout the world, including the 27 European Union member states, require or permit the use of International Financial Reporting Standards (IFRSs), developed by the IASB. The number of countries adopting IFRS is expected to increase to 150 by the end of 2011. Countries such as China and Canada have announced their intention to adopt IFRS from 2008 and 2011 respectively. Adoption of IFRS has been approved by the Securities Exchange Commission (SEC) as well. The SEC has issued a roadmap whereby a few big US corporations would begin reporting according to IFRS by 2014. Full conversion would be done by 2016 depending upon the size of the entity.

The matter of convergence to IFRS has gained increasing importance in India as well. At present, accounting standards in India are formulated and issued by the Accounting Standards Board (ASB). The standards issued by the ASB are more or less in line with IFRS except for a few instances where departure is necessary to comply with the legal, regulatory and economic environment. In May 2006, the Council of the Institute of Chartered Accountants of India (ICAI) expressed its opinion of adopting IFRS which was considered and supported by the ASB in a meeting held in August 2006. With a view to set up a road map for convergence and provide the necessary approach for convergence, ASB set up an IFRS Task Force. Based on the recommendations made by the IFRS Task Force, the council of the Institute decided to converge with IFRS from the accounting period commencing on or after 1 April 2011.

PRESENT STATUS OF INDIAN ACCOUNTING STANDARDS

- Presently, the Accounting Standards Board (ASB) of the Institute of Chartered accountants of India (ICAI) formulates Accounting Standards (ASs) based on the IFRSs keeping in view the local conditions including legal and economic environment, which have recently been notified by the Central Government under the Companies Act, 1956.
- Accordingly, the Ass depart from the corresponding IFRSs to maintain consistency with legal, regulatory and economic environment, and keeping in view the level of preparedness of the industry and the accounting professionals.
- In some cases, departures are made on account of conceptual differences with the treatments prescribed in the IFRSs.

WHAT IS IFRS?

- IFRS is a set of international accounting standards stating how particular types of transactions and other events should be reported in financial statements.
- IFRS are generally principles-based standards and seek to avoid a rule-book mentality. Application of IFRS requires exercise of judgment by the preparer and the auditor in applying principles of accounting on the basis of the economic substance of transactions.
- IFRS are issued by the International Accounting Standards Board.
- The term IFRS comprises IFRS issued by IASB; IAS issued by IASC; and Interpretations issued by the Standing Interpretations Committee (SIC) and the International Financial Reporting Interpretations Committee

DIFFERENCE BETWEEN IFRS & IAS

Majority of the standards which form part of IFRS were issued between 1973 and 2001 by the board of the International Accounting Standards Committee (IASC). The standards issued by IASC were known as IAS. In 2000, IASC Member Bodies approved the restructuring of the IASC's foundation and in March 2001, the new IASB took over the responsibility of setting the International Accounting Standards from the IASC. IASB adopted the standards set by IASC and continued to develop new standards and called the new standards - IFRS. Thus, practically there is no difference between IFRS and IAS and both are equally enforceable. The list of IFRS and IAS are given in the annexure for reference.

WHY IFRS?

Conversion to IFRS offers companies a number of important benefits. Companies that operate in a global environment and comply with foreign reporting requirements can streamline their financial reporting. This will reduce related reporting costs by developing common reporting systems and will ensure consistency in statutory reporting.

Furthermore, comparison and benchmarking of financial data with international competitors would be possible.

Adoption of IFRS will make cross border acquisitions and joint venture possible, and also provide access to foreign capital. This is because majority of stock exchanges require financial information presented according to the IFRS.

Early adoption of IFRS may offer an edge to the companies over their competitors as they can claim early adoption. This, in turn, will enhance the brand value of the company. The companies can trade their shares and securities on stock exchanges world-wide. For this, most of the stock exchanges require financial statements prepared under IFRS.

Another major benefit of convergence is that the management of a company can view all the companies in a group on a common platform. This will reduce the time and efforts involved to adjust the accounts in order to comply with the requirements of the national GAAP. Business acquisition would be reflected at fair value in IFRS rather than the carrying values. This would ensure greater transparency in the financial statements.

The implementation of IFRS in the corporate world would require trained accountants, auditors, valuers and actuaries. This will boost the growth of the service sector also as India can emerge as an accounting services hub. Moreover, a single set of accounting standards worldwide would ensure that auditing firms standardize their training and quality of work is maintained globally.

Implementation of IFRS would thus ensure the following benefits:

- i) Same language
- ii) Cross border investments leading to economic growth
- iii) Comparability of financial statements of any two companies anywhere in the world
- iv) Globalization of economy and world trade
- v) For multinational companies:
 - _ Consolidation of group financial statements made easier
 - _ Accounting and audit functions made easier and cheaper
 - _ Compliance with regulatory requirements of bodies such as stock exchanges
 - _ Mergers and acquisitions made easier
 - _ Access to multinational funds
- vi) The job of governments and standard setters in the developing countries made easier
- vii) The job of tax authorities made easier
- viii) Time and money saved by international professional accounting firms in planning and execution of accounting and audits
- ix) Administrative costs of accessing the capital markets around the world reduced.

IFRS IMPLEMENTATION CHALLENGES IN INDIA

In spite of the various benefits of adopting IFRS, implementation of IFRS is a Herculean task in India. Following are a few challenges faced during adoption and implementation of IFRS:

- Awareness about international practices

Adoption of IFRS means that the entire set of financial statements will be required to undergo a drastic change. There are a number of differences between the two GAAP's (discussed below). This may cause the users of financial statements to look at them from a new perspective. It would be a challenge to bring about awareness of IFRS and its impact among the users of financial statements.

- Training

Professional accountants are looked upon to ensure successful implementation of IFRS. The biggest hurdle for the professionals in implementing IFRS is the lack of training facilities and academic courses on IFRS in India. As the implementation date draws closer (2011), it is observed that there is acute shortage of trained IFRS staff. The solution to this problem is that all stakeholders in the organisation should be trained and IFRS should be introduced as a full time subject in the universities.

- Amendments to the existing law

It is observed that implementation of IFRS may result in a number of inconsistencies with the existing laws which include the Companies Act 1956, SEBI regulations, banking laws and regulations and the insurance laws and regulations. Currently, the reporting requirements are governed by various regulators in India and their provisions override other laws. IFRS does not recognise such overriding laws. Although steps to amend these laws have been initiated, the authorities need to ensure that the laws are amended well in time.

- Taxation

IFRS convergence would affect most of the items in the financial statements and consequently the tax liabilities would also undergo a change. Thus the taxation laws should address the treatment of tax liabilities arising on convergence from Indian GAAP to IFRS. It is extremely important that the taxation laws recognize IFRS compliant financial statements otherwise it would duplicate administrative work for the organizations.

- Fair value

IFRS uses fair value as a measurement base for valuing most of the items of financial statements. The use of fair value accounting can bring a lot of volatility and subjectivity to the financial statements. It also involves a lot of hard work in arriving at the fair value and valuation experts have to be used. Moreover, adjustments to fair value result in gains or losses which are reflected in the income statements. Whether this can be included in computing distributable profit is also debated.

- Management compensation plan

The terms and conditions relating to management compensation plans would also have to be changed. This is because the financial results under IFRS are likely to be very different from those under the Indian GAAP. The contracts would have to be re-negotiated which is also a big challenge.

- Reporting systems

The disclosure and reporting requirements under IFRS are completely different from the Indian reporting requirements. Companies would have to ensure that the existing business reporting model is amended to suit the reporting requirements of IFRS. The information systems should be designed to capture new requirements related to fixed assets, segment disclosures, related party transactions, etc. Existence of proper internal control and minimizing the risk of business disruption should be taken care of while modifying or changing the information systems.

TRANSACTION TO IFRS

The Institute of Chartered Accountants of India has proposed two options for convergence:

- All at once
- Stage-wise approach

It has been observed that there are certain implementation dangers and compliance problems with either AS or IFRS in adopting the all at once approach. Therefore, stage-wise approach would be preferable.

FIRST TIME ADOPTION

For first time adoption, two key terms need to be understood:

_ **Reporting date**-It is the end of the latest period covered by the financial statements.

_ **Transition date**- It is the beginning of the earliest period for which an entity presents its first full IFRS compliant financial statements.

ICAI has proposed that in the case of Indian corporate, the first reporting date will be 31-03-2012 and transition date will be 01-04-2010. Therefore, the first set of financials will be for the period 01-04-2011 to 31-03-2012 with IFRS comparables which are to be provided for the period 01-04-2010 to 31-03-2011. It is mandatory for entities to include at least one comparative period in IFRS compliant financial statements.

After considering the current economic environment, ICAI has decided that IFRS should be adopted for public interest entities such as listed companies, banking companies, insurance companies and other large sized entities from the accounting periods commencing on or after 1st April, 2011.

MAJOR DIFFERENCE IN INDIAN GAAP & IFRS

The major focus of IFRS is on getting the balance sheet right. This can bring significant volatility in the income statement. There are quite a lot of differences between the Indian GAAP and IFRS with respect to the presentation of financial statements, disclosure requirements, and accounting policies: it is difficult to summaries all the differences here. However a few of the major differences are given below for your reference.

Subject	IFRS	Indian GAAP
Components of Financial Statements	Comprises of _ Statement of Financial Position, -*Statement of Comprehensive Income - Statement of Cash flow - Notes to Accounts	Comprises of - Balance sheet - Profit and Loss A/c - Cash flow statement and

	-Statement of Changes in Equity (Note * - Also includes items of other comprehensive income such as revaluation gains, foreign exchange fluctuations, etc)	- Notes to Accounts
Format of SOFP	No particular format prescribed. However IAS prescribes disclosure on the basis of current and non-current assets and liabilities.	According to the format prescribed in Schedule VI to the Companies Act 1956, Banking Regulation Act for Banks etc.
Format of Income Statement	IAS 1 prescribes the format of income statement.	According to the format prescribed in Schedule VI to the Companies Act 1956, Banking Regulation Act for Banks etc.
Statement of Cash Flows	Mandatory for all entities	Exempted for Level 3 entities as prescribed by ICAI.
Presentation of Extraordinary Items	IFRS prohibits the presentation of extraordinary items in the statement of comprehensive income or in the notes.	Indian GAAP requires extraordinary items to be presented in the profit and loss statement of the entity distinct from the ordinary income and expenses for the period. As a result, extraordinary items are considered to determine the profit / loss for the period.
Dividends Proposed After the end of the Reporting Period	Dividends declared after the end of the reporting period but before the financial statements are authorized for issue are not recorded as liability in the financial statements.	Dividends declared after the end of the reporting period but before the financial statements are approved are recorded as liability in the financial statements.
Depreciation Rates	Allocated on a systematic basis to each accounting period during the useful life of the asset.	Depreciation is based on the higher estimate of useful life of the asset, or the rates prescribed by Schedule VI

		of The Companies Act 1956.
Change in the Depreciation Method	Treated as a change in the accounting estimate and hence is accounted for Prospectively.	Treated as a change in the accounting policy and is accounted for retrospectively (i.e. for all the relevant previous years). Any excess / deficit in the case of this kind of recalculation must be adjusted in the period in which the change is effected.
Entire Class to be Revalued	If an item of property, plant and equipment is revalued, the entire class of assets to which that asset belongs should be revalued.	An entire class of assets can be revalued, or selection of assets for revaluation can be made on a systematic basis.
Component Accounting	Mandates component accounting.	Recommends component accounting.
Functional and Foreign Currency	Functional currency is the currency of the primary economic environment in which the entity operates. Functional and presentation currencies may be different. The standard contains detailed guidance on this.	No concept of functional currency
Goodwill	Goodwill is not amortized under IAS 38 but is subject to annual impairment test under IAS 36.	AS 14 provides that goodwill arising on amalgamation in the nature of purchase is amortized over a period of 5 years.
Measurement of Intangible Assets	Can be measured at cost or revalued amount.	Are measured at cost only.

Actuarial Gain or Loss	IAS 19 gives three choices for the treatment of actuarial gains or losses arising on measurement of employee benefits.	Actuarial gains and losses should be recognized immediately in the statement of profit and loss as an income or expense.
Contingent Asset Disclosure	Contingent assets are disclosed in the financial statements only if the inflow of economic benefit is probable. (Para 37)	Contingent assets are disclosed as part of the director’s report (approving authority)and are not disclosed in the financial statement.
Entities Operating in Hyper Inflationary Economies	IAS 29 – Financial Reporting in Hyper Inflationary Economies prescribes reporting requirement for entities operating in hyperinflationary economies.	There is no equivalent standard.

FIVE CONSIDERATIONS UNDER IFRS

- IFRS is an accounting-driven but it can drive major changes to IT systems as well as business processes and personnel.
- Experience indicates that IT costs generally constitute more than 50 percent of IFRS conversion costs.
- Organizations benefit when they identify and integrate the efforts of the IT team early in the IFRS conversion process.
- IT efforts will comprise a mix of short- and long-term projects within the organization’s overall IFRS initiative.
- The IFRS conversion effort provides opportunities for achieving synergies with other IT projects and strategic initiatives.

CONVERGENCE TO IFRS

- The IFRS issued by the International Accounting Standards Board (IASB) are increasingly being recognized as Global Reporting Standards.
- More than 100 countries such as countries of European Union, Australia, New Zealand and Russia currently require or permit the use of IFRSs in their countries.
- In line with the global trend, the Institute of Chartered Accountants of India (ICAI) has proposed a plan for convergence with IFRS with effect from April 1, 2011.
- Convergence to IFRS would mean India would join a league of more than 100 countries, which have converged with IFRS.

WHY CONVERGENCE TO IFRS?

- A single set of accounting standards would enable internationally to standardize training and assure better quality on a global screen.
- It would also permit international capital to flow more freely, enabling companies to develop consistent global practices on accounting problems.
- It would be beneficial to regulators too, as a complexity associated with needing to understand various reporting regimes would be reduced.

MEENING OF CONVERGENCE WITH IFRS

- Convergence means to achieve harmony with IFRSs; in precise terms convergence can be considered “to design and maintain national accounting standards in a way that financial statements prepared in accordance with national accounting standards draw unreserved statement of compliance with IFRSs”, i.e., when the national accounting standards will comply with all the requirements of IFRS.
- But convergence doesn't mean that IFRS should be adopted word by word, e.g., replacing the term ‘true & fair’ for ‘present fairly’, in IAS 1, ‘*Presentation of Financial Statements*’. Such changes do not lead to non-convergence with IFRS.
- The IASB accepts in its ‘Statement of Best Practice: Working Relationships between the IASB and other Accounting Standards-Setters’ that “adding disclosure requirements or removing optional treatments do not create noncompliance with IFRSs. But additional disclosures or removing of optional treatment should be made clear so that users of the IFRS are aware of the changes.

IFRS REPORTING IN INDIA : PROPOSED TIMELINES

- Reporting under IFRS, as proposed by ICAI, would be applicable for accounting periods beginning on or after April 1,2011.
- The first set of IFRS financial statements for the year ending March 31, 2012 would require preparation of :
 - Opening balance sheet as on April 1, 2010
 - Comparative financial statements – year ending March 31, 2011
- Reporting enterprises would need to ensure preparedness for IFRS reporting as early as April 2010.

WHICH ENTITIES WILL BE COVERED UNDER CONVERGENCE STRATEGY

Keeping in view the complex nature of IFRSs and the extent of differences between the existing ASs and the corresponding IFRSs and the reasons therefore, the ICAI is of the view that IFRSs should be adopted for the public interest entities from the accounting periods beginning on or after 1st April, 2011.

BENEFITES OF CONVERGENCE**Single Reporting**

Convergence with IFRS eliminates multiple reporting such as Indian GAAP, IFRS, US GAAP

Increase Comparability

- IFRS will give more comparability among sectors, countries and companies.
- This will result in more transparent financial reporting of a company's activities which will benefit investors, customers and other key stakeholders in India and overseas

Access to Global Capital Markets

- Convergence with IFRS will enable Indian entities to have easier access to global capital markets and eliminates barriers to cross-border listings.
- It encourages international investing and thereby leads to more foreign capital flows to the country

Benefits for Investors

Financial statements prepared using a common set of accounting standards help investors better understand investment opportunities as opposed to financial statements prepared using a different set of national accounting standards

IFRS balance sheet will be closer to economic value

Historical cost will be substituted by fair values for several balance sheet items, which will enable a corporate to know its true worth

Benefits to the accounting professional

Convergence to IFRS will increase the opportunities for Indian professionals in abroad as they will be able to sell their services as experts in different parts of the world

Benefits for the Industry

- Currently companies need to prepare additional financial statements based on multiple reporting formats to arise capital in global market.
- Convergence with IFRS will eliminate the requirement for dual set of financials statements and thereby reduces the cost of raising funds by the companies

Improvement in financial reporting

- Better quality of financial reporting due to consistent application of accounting principles and improvement in reliability of financial statements.
- This, in turn, will lead to increased trust and reliance placed by investors, analysts and other stakeholders in a company's financial statements

Change to regulatory environment

- For the success of convergence in India, certain regulatory amendment is required.
- For example, The Companies Act (Schedule VI) prescribes the format for presentation of financial statements for Indian companies, whereas the presentation requirements are significantly different under IFRS. So, the companies act needs to be amended in line with IFRS.

Lack of Preparedness

Adoption of IFRS by approximately 5000 listed companies by 2011 would result in a significant demand for IFRS resources. Corporate India and accounting professionals need to be trained for effective migration to IFRS. Additionally auditors would need to train their staff to audit under IFRS environment

Educating Stakeholders

Educating Stakeholders comprising of investors, lenders, employees, auditors, audit committee and etc would be a big challenge as this would require a considerable time and effort

Significant cost

Significant one-time costs of converting to IFRS (including costs of internal personnel time, adapting IT systems, implementing revised reporting policies and processes, training personnel and educating investors, analysts and members of the board)

Complexity in the financial reporting process

Under IFRS, companies would need to increasingly use fair value measures in the preparation of financial statements. Companies, auditors, users and regulators would need to get familiar with fair value measurement techniques

Impact on financial performance

Due to the significant differences between Indian GAAP and IFRS, adoption of IFRS is likely to have a significant impact on the financial position and financial performance of most Indian companies

Communication of Impact of IFRS to investors

Companies also need to communicate the impact of IFRS convergence to their investors to ensure they understand the shift from Indian GAAP to IFRS.

Conceptual differences

For example, the Indian standard on intangibles is based on the concept that all intangible assets have a definite life, which cannot generally exceed 10 years; while IFRS acknowledge that certain intangible assets may have indefinite lives and useful lives in excess of 10 years are not unusual

Categorization of IFRS by ICAI

ICAI has categorized the IFRS in five categories based on the extent of changes or the extent of support required from the regulatory authorities:

CATEGORIES OF IFRS

<p>Category I A IFRSs which do not have any differences with the corresponding IAS</p> <ul style="list-style-type: none"> • IAS 11, Construction Contracts • IAS 23, Borrowing Costs 	<p>Category I B IFRS which has certain minor differences with the corresponding Indian Accounting Standards</p> <ul style="list-style-type: none"> • IAS 2 Inventories • IAS 7, Cash Flow Statements • IAS 20, Accounting for Government Grants and Disclosure of Government Assistance • IAS 33, Earnings Per Share • IAS 36, Impairment of Assets • IAS 38, Intangible Assets
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Category II IFRS

IFRSs which may require some time to reach a level of technical preparedness by the industry and professionals keeping in view the existing economic environment and other factors

- **IAS 18**, Revenue
- **IAS 21**, The Effects of Changes in Foreign Exchange Rates
- **IAS 26**, Accounting and Reporting by Retirement Benefit Plans
- **IAS 40**, Investment Property (Corresponding Indian Accounting Standard is under preparation)
- **IFRS 2**, Share-based Payment (Corresponding Indian Accounting Standard is under preparation)
- **IFRS 5**, Non-current Assets Held for Sale and Discontinued Operations (Corresponding Indian Accounting Standard is under preparation)

Category III IFRS

<p>Category III A IFRSs having conceptual differences with the corresponding Indian Accounting Standards that should be taken up with the IASB</p> <ul style="list-style-type: none"> • IAS 17,Leases • IAS 19, Employee Benefits • IAS 27,Consolidated and Separate Financial Statements • IAS 28, Investments in Associates • IAS 31, Interests in Joint Ventures • IAS 37, Provisions, Contingent Liabilities and Contingent Assets 	<p>Category III B IFRSs having conceptual differences with the corresponding IAS that need to be examined to determine whether these should be taken up with the IASB or should be removed by the ICAI itself</p> <ul style="list-style-type: none"> • IAS 12, Income Taxes • IAS 24, Related Party Disclosures • IAS 41, Agriculture (Corresponding Indian Accounting Standard is under preparation) • IFRS 3, Business Combinations • IFRS 6, Exploration for and Evaluation of Mineral Resources IFRS 8,Operating Segments
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Category IV and V IFRS

<p>Category IV IFRSs, the adoption of which would require changes in laws/regulations because compliance with such IFRSs is not possible until the regulations/laws are amended.</p> <ul style="list-style-type: none"> • IAS 1, Presentation of Financial Statements • IAS 8, Accounting Policies, Changes in Accounting Estimates and Errors • IAS 10, Events After the Balance Sheet Date • IAS 16, Property, Plant and Equipment • IAS 32, Financial Instruments: Presentation (Exposure Draft of the Corresponding Indian Accounting Standard has been issued) • IAS 34, Interim Financial Reporting • IAS 39, Financial Instruments: Recognition and Measurement (Exposure Draft of the Corresponding Indian Accounting Standard has been issued) • IFRS 1, First-time Adoption of International Financial Reporting Standards • IFRS 4, Insurance Contracts • IFRS 7, Financial Instruments: Disclosures 	<p>Category V IFRSs corresponding to which no Indian Accounting Standard is required for the time being.</p> <ul style="list-style-type: none"> • IAS 29, Financial Reporting in Hyper-inflationary Economies
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CONCLUSION

Looking at the present scenario of the world economy and the position of India convergence with IFRS can be strongly recommended. But at the same time it can also be said that this transition to IFRS will not be a swift and painless process. Implementing IFRS would rather require change in formats of accounts, change in different accounting policies and more extensive disclosure requirements. Therefore all parties concerned with financial reporting also need to share the responsibility of international harmonization and convergence. Keeping in mind the fact that IFRS is more a principle based approach with limited implementation and application guidance and moves away from

prescribing specific accounting treatment all accountants whether practicing or non-practicing have to participate and contribute effectively to the convergence process. This would lead to subsequent revisions from time to time arising from its global implementation and would help in formulation of future international accounting standards. A continuous research is in fact needed to harmonize and converge with the international standards and this in fact can be achieved only through mutual international understanding both of corporate objectives and rankings attached to it.

- Benefits derived from convergence are lot but also the challenges. The success of the convergence to IFRS in India will depend on cooperation from government, regulators and tax departments.
- Ultimately, it is imperative for Indian entities to improve their preparedness for IFRS adoption and get the conversion process right. Given the current market conditions, any restatement of results due to errors in the conversion process would be detrimental to the company involved and would severely damage investor confidence in the financial system.
- The transition to IFRS is likely to be challenging for corporate India. However, if the transitioned is planned and managed successfully, it will generally be positive for financial reporting in India. This will improve the quality and transparency of the financial reporting process and further align corporate India to the global economy and the global capital markets.
- There is an urgent need to address these challenges and work towards full adoption of IFRS in India. The most significant need is to build adequate IFRS skills and an expansive knowledge base amongst Indian accounting professionals to manage the conversion projects for Indian entities . This can be done by leveraging the knowledge and experience gained from IFRS conversion in other countries and incorporating IFRS into the curriculum for professional accounting courses.

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EMPLOYEE INVOLVEMENT – A TOOL FOR ORGANIZATIONAL EXCELLENCE

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ABSTRACT

HR strategies are integrally linked to the management of change. There are two principal elements to this relationship. One of these focuses on the role that HR strategies may play in helping to generate organizational change. It is recognized that this aspect of the relationship is likely to be problematic in terms of implementation. Strategy is the direction and scope of an organization over the long term: ideally which matches its resources to its changing environment and in particular its markets, customers, or clients so as to meet stakeholder expectations. Employee Involvement (EI) refers to “a range of processes designed to engage the support, understanding, and optimum contribution of all employees in an organization and their commitment to its objectives” (Kessler and Bayliss). In this Paper, an attempt is made to evaluate the role of EI in achieving organizational and employee relations change. It also analyses the approaches to understanding the psychological contract and employee commitment and evaluate their links to EI besides linking employee relations and involvement strategies to other HR change interventions. This Paper also evaluates the scope for EI strategies to realize intended change.

A ‘unitary workforce’ is ‘an integrated group of people with a single authority/loyalty structure and a set of common values, interests, and objectives shared by all members of the organization (Salamon).’ One particular strategy to develop a ‘unitary workforce,’ that is related to attempts to engender EI is explored and evaluated in this Paper. In spite of alleged employer benefits as well as those from the perspective of employees, a number of problems in relation to the realization of EI are discussed. The scope for this strategy to realize intended change must therefore remain open to question and evaluation wherever its use is being considered. The way an organization introduces or uses EI may adversely affect its effectiveness. Line managers do confront a number of problems in their role in the implementation of EI and may have a problem around the low level of process control that they exercise and the expectations placed on them in relation to top-down approaches to EI.

KEY WORDS

Employee Involvement (EI); Employee Relations; Psychological Contract; Organizational Commitment (Attitudinal commitment; and Behavioral commitment); Unitary Workforce; Empowerment.

1.0 INTRODUCTION

The use of Human Resource (HR) development strategies is integrally linked to the management of change. There are two principal elements to this relationship. One of these focuses on the role that HR development strategies may play in helping to generate organizational change. It is recognized that this aspect of the relationship is likely to be problematic in terms of implementation. In recognizing the potential for unintended outcomes from the implementation of strategic change centering on people at work, we realize that the contents of this Paper will only consider part of the complexity that results in practice.

Strategy is the direction and scope of an organization over the long term: ideally which matches its resources to its changing environment and in particular its markets, customers, or clients so as to meet stakeholder expectations. (Johnson and Scholes, 1993:10) This approach to strategy, focusing on the internal resource capability of an organization as well as the challenges that it faces in its external operating environment, has the potential to enhance the role that HR strategies may contribute to the change process as an organization attempts to adapt itself strategically (Purcell, 1995). Although an organization's human resources are only one aspect of its resource base, this approach suggests that recognizing and developing these resources will not only help an organization to match them to changes in the environment but also create 'distinctive capabilities' to seek (further) competitive advantage (Kay, 1993; Purcell, 1995). In this Paper, an attempt is made to evaluate the role of Employee Involvement (EI) in achieving organizational and employee relations change. It also analyses the approaches to understanding the psychological contract and employee commitment and evaluate their links to EI besides linking employee relations and involvement strategies to other HR change interventions.

1.1 MANAGING CHANGE THROUGH EMPLOYEE INVOLVEMENT (EI)

EI refers to "a range of processes designed to engage the support, understanding, and optimum contribution of all employees in an organization and their commitment to its objectives" (cited in Kessler and Bayliss, 1998: 125). EI may be conceived of and approached as a narrow concept, with limited objects, or as a much broader strategy. The recognition of EI as a broader concept demonstrates its problematic nature. EI strategies have been used by organizations in their attempts to develop a unitary workforce. In *theory*, these strategies are potentially an important means to bring about organizational and employee relations change. In *reality*, however, several other factors are likely to affect adversely any attempt to achieve this desired outcome. This Paper therefore evaluates the scope for EI strategies to realize this type of intended change.

As a general principle, many employing organizations want to employ people who feel involved in the work that they undertake. However, EI is more specifically used as a means to promote employee relations and other organizational change. For those organizations that recognize and negotiate with trade unions but wish to move away from this approach, EI may be used as a means to reduce union influence or to replace the role of unions in managing employee relations. Firms may also use EI as a means to generate employee support without the need to recognize trade unions. This type of strategy has been used to avoid a change away from an organization's non-union status and it characterizes the approach adopted by many organizations that espouse soft HRM principles.

However, it is important to recognize that EI may also be used as a parallel set of activities to traditional employee relations processes involving unions (see, for example, Storey, 1992). EI is also used in the promotion of change management events that do not relate to trade unions, at least directly. For

example, many advocates of quality management and continuous improvement programmes see the achievement of EI as a condition for success (see, for example, Wilkinson et al., 1992).

1.1.1 Claimed effects from the implementation of Employee Involvement

Generally definitions on EI lay stress on the alleged causal linkages between EI and the development of employees' commitment and contribution to their employing organizations. Claimed effects such as: improvement in employees' business awareness, employee relations, job satisfaction, employee morale, generation of employees' commitment to the firms' objectives, fostering in trust by employees towards those who manage them, creation of a more customer-focused approach and improvement in customer service and product quality, promotion of greater acceptance of organizational change, greater employee flexibility, encouragement for more effective working relationships, generation of employee empowerment, etc., need to be evaluated in this Paper.

1.1.2 Fundamental problems with Employee Involvement Initiatives

Although these claims are made in relation to the achievement of effective EI, they raise a number of fundamental problems. The very notion of effectiveness of EI is based on the assumption that this strategy will *not* lead to any conflict with other organizational or personal goals. We discuss these areas of potential conflict later. Although many of these aspects are not inevitable, they cast serious doubt on the achievement of effectiveness of many EI strategies. Consequently, while EI is intended to promote organizational change and effectiveness, its use is likely to be problematic, and its intended outcomes somewhat less than fully achieved (see, for example, Marchington, 1955a). Even where an issue is not raised about the validity of the philosophical underpinnings of this type of strategy, a problem would arise for those who claim that EI is capable of achieving the whole range of change outcomes suggested earlier. In such a case, it would need to assume a major significance in the operating process of an organization and become truly embedded as an underlying assumption of its culture. This raises a question about the ways in which this type of EI strategy would manifest itself in such an organization. If the adoption of certain communication techniques or a suggestion scheme indicates a narrow approach to EI with committed objectives, then a much more broadly based strategy would clearly require EI to be infused in many different areas of organizational decision making and implementation (see, for example, Caldwell, 1993).

1.1.3 Categories of Employee Involvement

Main categories of EI such as downward communication, problem-solving involvement and upward communication, consultation, involvement through structural changes at job and work organization levels, financial involvement, managerial style and leadership, etc. indicate the way in which the concept of EI is related to as well as affected by many aspects of organizational life. To approach this relationship from the opposite direction, there are many aspects of organizational life that are capable of producing negative employee feelings and emotions such as frustration, unfairness, and alienation. Approached from this direction, it becomes easier to understand the nature of EI as diffuse yet connected to many organizational aspects. In order for employees to feel genuinely involved in the operations of an organization, it is therefore very likely that a number of variables capable of engendering this feeling will need to be acting in concert to produce this desired outcome (see, for example, Marchington et al., 1994).

However, in reality, this may only serve to demonstrate the difficulties and even the contradictions associated with any organizational strategy to engender genuine EI. To exemplify this, there are cases where EI was 'crowded out' by other organizational factors. There are a number of broader

organizational strategies/facets that will serve to enable or inhibit EI. Some of them are: organizational performance, prospects, and corporate direction; organizational culture; organizational structures and restructuring; training, HRD and career management; performance management; and other strategies such as those relating to health and safety, and employee relations approaches. A 'unitary workforce' is 'an integrated group of people with a single authority/loyalty structure and a set of common values, interests, and objectives shared by all members of the organization (Salamon, 1998:5).

One particular strategy to develop a 'unitary workforce' that is related to attempts to engender EI can be explored and evaluated in this Paper. This strategy has been associated with many claims about its alleged benefits, based on a unitary perspective of the way in which organizations should operate. These claims are difficult to realize in practice and the use of EI is problematic. Organizational techniques to engender involvement may be negated by employee perceptions about a range of other organizational characteristics and circumstances that undermine their credibility. Nevertheless, a number of other factors, considered from the perspective of employees, can be discussed in relation to the pursuit of EI. These relate to employees' perceptions about organizational treatment, including managerial style, employee expectations, the scope for employee voice and influence, and the provision of managerial justification in relation to decision making.

In spite of alleged employer benefits as well as those from the perspective of employees, a number of problems in relation to the realization of EI can be discussed. They primarily relate to organizational characteristics and circumstances that inhibit EI; implementation issues around its use; the changing nature of many employees' psychological contracts; and the multifaceted nature of employee commitment. The scope for this strategy to realize intended change must therefore remain open to question and evaluation wherever its use is being considered.

1.2 WHAT OTHER ASPECTS OF THE WAY IN WHICH AN ORGANIZATION INTRODUCES OR USES EMPLOYEE INVOLVEMENT MAY ADVERSELY AFFECT ITS EFFECTIVENESS?

Implementation issues in the use of employee involvement as a change strategy

A simple stakeholder analysis reveals another source of conflicting factors that are capable of inhibiting the realization of EI in practice. There is a body of literature that evaluates the roles for and responses of groups of managers, employees and trade unions in relation to attempts to encourage EI (e.g. Marchington 1995a, 1995b). We will briefly consider each of these from the perspective of the conflict that is likely to arise, which will impair EI.

Line managers are likely to play a central role in implementing EI. However, they may feel that this type of strategy is wasteful of their time or misguided in terms of its intended outcomes. This may be because they feel that their discretion to operate as they wish is threatened or because they recognize that demands from above to use their time to promote employee involvement will not be properly resourced, or perhaps for both reasons.

Given the earlier recognition of the relationship between organizational culture and EI, it is likely in situations where managers feel their power will be threatened that this will also indicate a cultural state which will inhibit effective EI, Storey (1992:111) refers to the fate of an EI technique in one of his case study organizations: 'quality circles had been introduced by- factory manager but they had been "killed off" by middle managers who saw in them a threat to their own role.'

Guest *et al.* (1993) undertook case study work that recognized the potential for conflict between production or financial targets and the pursuit of EI. Their case study organization, British Rail, was undergoing rapid change that involved it pursuing goals related to cost efficiencies and restructuring, on the one hand, and higher quality customer service, on the other hand. Guest *et al.* (1993: 199) found that the attempt to encourage EI related to the desire to achieve better customer service was 'crowded out by the financial imperatives and the spate of reorganizations'. In less dramatic ways, it is possible to understand how EI is 'crowded out' by the imperative of other targets, so that it becomes at best a marginal, bolt-on strategy that is 'nice to have' but only when the organization sees some benefit from seeking to involve its employees!

1.3 WHAT OTHER PROBLEMS LINE MANAGERS MAY CONFRONT IN THEIR ROLE IN THE IMPLEMENTATION OF EMPLOYEE INVOLVEMENT?

Although attempts to engender EI may be seen as a positive development for employees, they will not necessarily be received in this way. A number of factors will affect employee perceptions about particular attempts to introduce EI strategies. One such factor may relate to employee experiences of any previous attempt to introduce an employee involvement strategy. Previous attempts that have been seen to fail, or which were perceived as attempts to increase managerial control over employees rather than to encourage their involvement, are likely to increase employee resistance and cynicism. In addition, some groups of employees may be used to an environment in which they have not been involved and will view any attempt to achieve involvement as something that they do not want (Guest *et al.*, 1993). A further factor will relate to the broader organizational circumstances and characteristics discussed earlier.

Employees are likely to resist and feel cynical in relation to overtures to develop EI if they perceive the existence of other threats from the organization and inconsistencies with the way in which it treats them (Marchington *et al.*, 1994). Attempts to introduce the notion of empowerment are a point of issue in relation to the way in which employees perceive the motives and actions of management. Marchington (1995b: 61) summarized the espoused intention underpinning empowerment and its reality as follows:

"The implication behind notions of empowerment is that employees will be allocated greater power to do things, be entrusted with authority, and achieve higher levels of control – not only over their own specific work functions but also more widely throughout the organization. In reality, of course, this does not generally happen and any increase in authority is heavily circumscribed and maintained within the confines of managerial control systems."

The study by Cunningham *et al.* (1996) into empowerment practices in thirteen organizations substantiates Marchington's conclusion. They found that non-managerial employees gained little in terms of increased control through the approach adopted. Indeed, the approach to 'empowering' employees in several of their case study organizations was narrowly conceived (e.g. introducing Suggestion Schemes). In others, where it involved a broader approach to empowering employees (e.g. through teamworking and job enrichment) strong managerial control was still evident through the imposition of accountability and intolerance of repeated mistakes. Sewell and Wilkinson (1992: 111) similarly posed the question 'do self-managers (so-called empowered employees] possess any real degree of empowerment?', and concluded, 'The answer is "yes", but only in a highly circumscribed

form.' In relation to empowerment's role to introduce change, we conclude that this approach may be effective for the organization (*see* Cunningham *et al.*, 1996), but that it may not involve employees in terms of promoting their organizational commitment or altering their perceptions of the way in which they are treated. This will especially be the case where empowerment is effectively little more than a means to make employees work harder (Marchington, 1995b).

1.4 RECOGNIZING THE NATURE OF THE PSYCHOLOGICAL CONTRACT AND ITS IMPACT ON THE SCOPE FOR EMPLOYEE INVOLVMENT

One of the ways in which a more flexible workforce may be created is through the use of a core-periphery strategy. However, while this strategy will introduce one form of organizational change, it is likely to create another, less tangible outcome related to the psychological contracts of those affected by this type of structural change. Herriot and Pemberton's (1996) contractual model of careers provides a useful framework through which to explore this transfer of employee status and any change in psychological contract. Within this model, a clear distinction is made between two types of psychological contract that emerge from this type of change. The first contractual type is termed 'relational' (Herriot and Pemberton, 1996). It implies an ideal model of mutual commitment between the employee and the organization involving general reciprocity. The organization offers security of employment, training and development and promotion prospects while the employee offers loyalty, commitment and trust (Herriot and Pemberton, 1995). The second contractual type identified in the model is 'transactional' (Herriot and Pemberton, 1996). This implies that the relationship between the employee and the organization is an instrumental exchange implying strict reciprocity between the employee's labour and some form of compensation. While employees will be concerned about whether or not this exchange has been fair, their loyalty and commitment is unlikely to be an integral part of the contract.

1.5 THE DESIRED LINK: UNDERSTANDING THE REALITY OF EMPLOYEE COMMITMENT

One of the claimed benefits of using an EI strategy is the generation of employee commitment to an organization. In turn, this is seen as a means to bring about beneficial change in an organization. However, attempts to define, engender and measure commitment in the context of organizational behaviour have led to the recognition that this is a problematic concept (e.g. Legge, 1995). Two principal problems have been recognized. The first of these relates to the difference between attitudinal commitment and behavioural commitment (*see*, for example, Coopey and Hartley, 1991; Morris *et al.*, 1993). Attitudinal commitment refers to the strength of an employee's identification with and involvement in their employing organization (Mowday *et al.*, 1982). Porter *et al.* (1974) operationalize this approach to organizational commitment as: a strong belief in and acceptance of an organization's goals and values; a willingness to expend considerable effort on an organization's behalf; and a strong desire to continue as a member of the organization. This is the type of commitment associated with the claim referred to at the start of this paragraph.

In contrast, behavioural commitment is based on a different set of motives, at least with regard to the first two elements of the Porter *et al.* conceptualization. Whereas attitudinal commitment is based on moral involvement and the internalization of organizational values, behavioural commitment is founded

on an individual's calculative judgement about the investments they have made in relation to their current job and the organization for which they work - referred to as 'side bets' (Becker, 1960).

In this way the time they have spent in their employing organization will 'bind' rather than commit them to continued membership (Griffin and Bateman, 1986). This approach to organizational commitment makes clear that the desire to maintain membership of an organization may be due to the opportunities for development. However, those managers who took an interest in the outcome of these attempts to introduce employee involvement still felt that even in these sections, as well as elsewhere in Engco, the introduction of this strategy 'still left a lot to be desired'.

1.6 CONCLUDING REMARKS

The way an organization introduces or uses EI may adversely affect its effectiveness. In support of this, one may produce an answer containing a number of different aspects. However, we should emphasize two aspects. EI may simply be used as a 'bolt-on' strategy in an organization. EI is, or should be, an 'integrated' concept, affected by as much as affecting other aspects of organizational life (Marchington et al., 1994). Therefore, where no attempt is made to integrate this strategy as part of the culture of the organization, for example, it is unlikely to develop as intended. We may refer to Guest et al. (1993), whose work indicated how EI was seen as a secondary concept in their case study organization and became 'crowded out' by other strategies seen as far more important. A second aspect related to the way in which an organization introduces and uses EI that may have a significant bearing on its effectiveness is related to the thesis of Beer et al., 1990. The distinction between the use of involvement as a bottom-up strategy that is developed in the specific setting of an emergent change and as a top-down, imposed approach. Beer et al. (1990) believe that the former approach is likely to be much more effective and to lead to genuine involvement. This is associated with their task alignment approach to the generation of change through involving employees and building on their skills and knowledge in the context of a specific change scenario. They believe that the latter, imposed type of strategy is less likely to be effective for this reason.

Line managers do confront a number of problems in their role in the implementation of EI. Again, one can generate a number of different aspects in his/her responses to this question. The additional problems that they confront may include conflicting approaches to the implementation of EI initiatives between managers. Thus, some managers may attempt to implement faithfully the initiatives that have been introduced, while others may not do so. This may result in conflict and stress. Another problem for line managers may relate to the range of initiatives that they are expected to have responsibility for and changes that emerge to the techniques that are used. This suggests that managers themselves may have a problem around the low level of process control that they exercise and the expectations placed on them in relation to top-down approaches to EI.

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PREFERENTIAL TRADING AGREEMENTS: THE CASE FOR ASEAN+4 AS A POTENTIAL TRADE BLOC

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ABSTRACT

In this paper an attempt is made to evaluate the most efficient approach to regional economic integration in Asia. For the purpose of study, Asia is defined as inclusive of ASEAN(Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, The Philippines, Singapore, Thailand, and Vietnam) plus four economics of china, Japan, South Korea and India that is the ASEAN plus four or a group of JACIK countries(Japan, ASEAN, China, India and South Korea). ASEAN is an existing regional block in Asia, alternative approach to the alignment of the plus four economics with ASEAN for the formation of ASEAN+4 trade block have been evaluated to determine if there are efficiency costs by way of distortion in the pattern of trade away from those expected on the basis of comparative advantage. The findings of our analysis underscore the efficiency of a prior alignment with ASEAN for all plus four economies.

INTRODUCTION

The 1990s have witness a strong trend towards regional incorporation, particularly among the developed countries. This trend is exemplified by Europe's advancement towards an economic union. The European Central Bank (ECB) came into existence in 1998, and the European currency, Euro became the monetary unit of the European Union (EU) in January, 2002. Thus, the EU is now much more than a Regional Trading Arrangement (RTA). Each member has consented to constraints relating to policy Autonomy and sovereignty in certain areas, and is committed to the development of the European institutions, including a European Constitution.

In 1994, U.S., Canada, and Mexico formed a Regional Trade and Investment Agreement, called NAFTA. This agreement is much more limited compared to the agreement among the EU members. All EU and NAFTA members however belong to the OECD, a club for high income countries. In East Asia, urgency of greater consultation and coordination in economic policies has been particularly felt since the 1997 East Asian crisis.

In the South Asian region, economic cooperation has been limited, even though SAARC has been in existence since 1985. There has also been sub -regional cooperation arrangements in Asia. Notable examples are BIMST-EC (comprising Bangladesh, India, Myanmar, Sri Lanka, and Thailand); and the Mekong-Ganga Cooperation Group, involving India, Cambodia, Laos, Myanmar, Vietnam and Thailand. India already has a functioning FTA with Sri Lanka; a common market with Nepal; and is negotiating an FTA with Thailand. There have also been attempts by some Asian countries, notably Singapore, to engage in bilateral free trade arrangements. Thus, Singapore and India signed an agreement in April 2003 to begin detailed negotiations on the Comprehensive Economic Cooperation Agreement (CECA).

Since the initiation of India's Look East Policy in the early 1990s, bilateral relations between India and ASEAN have progressed rapidly. Thus, India became a sectoral dialogue partner of ASEAN in 1992; full dialogue partner in 1995; and a member of the ASEAN Regional Forum (ARF) dealing with security issues in July 1996. The first ever ASEAN-India summit hosted by Cambodia in November 2002 represented another important milestone in bilateral relations. While India has been interacting with ASEAN for more than a decade, it has been formally cooperating with two of the JACIK members from Northeast Asia, namely China and South Korea, as a part of the Bangkok Agreement concerning trade cooperation, which has been operational since 1975. China however joined the agreement only in 2001. It is anticipated that with the accession of China, not only will the Bangkok Agreement be of greater benefit to existing members, but that more countries are likely to join the agreement. Mukherjee has argued for a shift from the positive to a negative list as the basis for the trade liberalization among the members of the Bangkok Agreement. If this is accepted, then more rapid trade liberalization among the members may well occur.

Economic engagement between India and China has been deepening in recent years. Both countries have decided to focus on economic issues and leave political and security issues to be resolved at a latter date. Thus, direct economic relationship between the two has been growing rapidly. Both countries wish to focus on domestic tasks and require rapid economic growth and greater integration with the world economy. This common interest requires cooperation even as they compete in different economic sectors.

India's relations with South Korea have focused on realizing synergies between Korea's competitive advantage in electronics hardware, and India's in chip design and software. Both countries regard each other as an important partner in diversifying economic relationship to lessen the risk of over-dependence on the current major trading partners. India also regards South Korea as an important source of foreign investment, particularly in manufacturing and in infrastructure.

India and Japan appear to have established a firmer basis for wide-ranging economic and political cooperation. The need to protect sea-lanes in the Indian Ocean and the Malacca Straits, combating international terrorism, stake in checking North Korea's nuclear ambitions, complementarities in developing advanced technologies, including in chip design, biotechnology, space and defense sectors, and the need to diversify their economic partners have contributed to this welcome development. Japan is a major bilateral aid donor to India; and a major investor, particularly in motor vehicles, electronics, and entertainment sectors.

SAMPLE PERIOD AND DATA

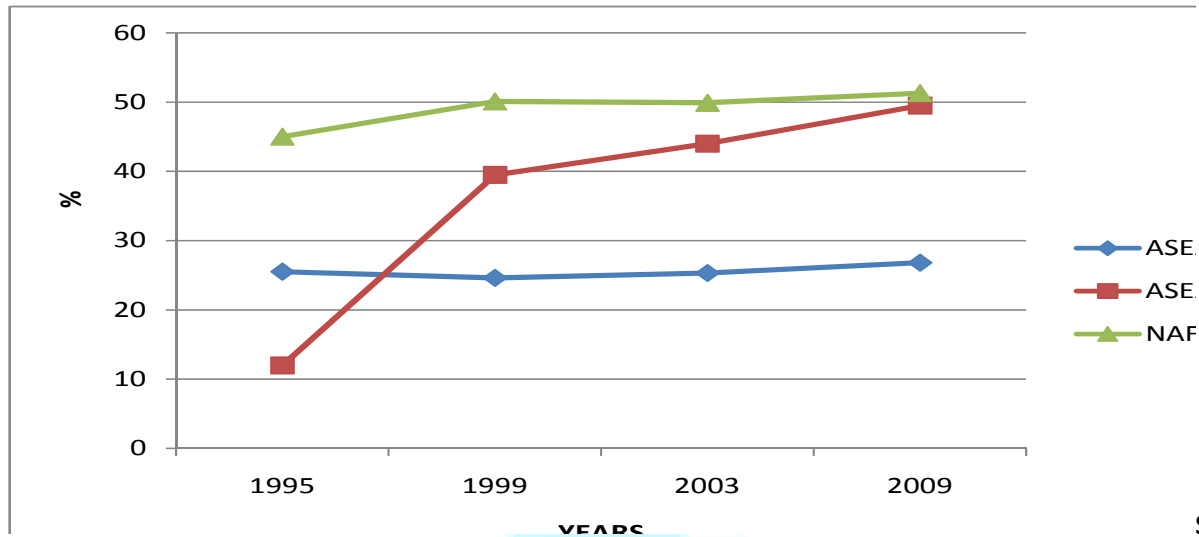
The data include in this paper comprise annual nominal export import performance of ten ASEAN plus four countries that is, Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, The Phillippines, Singapore, Thailand, and Vietnam China, Japan, South Korea and India. The reference period for the analysis in this paper is 1995 to 2009. The major source of data is the Direction of Foreign Trade Statistics Yearbook published by IMF, World Development Reports, UN Comtrade, ASEAN Finance and Macro-economic Surveillance Unit Database, ASEAN Merchandise Trade Statistics Database and ASEAN Foreign Direct Investment Statistics Database. The data set contains bilateral export and import record of ASEAN+4 economies and their share in world trade volume.

RESULT AND DISCUSSION

The ASEAN+4 regions comprising two of the most dynamic economies of the world that is India and China. As may be noted from the available facts the gross national income of the countries comprising the regional block is over US \$ 9.8 trillion in 2008 as comparable to US \$ 10.8 trillion or gross national income of the EU. In terms of purchasing power parity, the national income of ASEAN+4 is more than the national income of NAFTA or the EU. The share of proposed 14 country of ASEAN+4 has 19 per cent in the total world trade which is almost as much as that of NAFTA in global output.

The case ASEAN+4 as a potential trade bloc in Asia are proposed on the basis of the encouraging trends evident in intra-bloc trade. Intra regional trade as a per cent of the total trade at an aggregate level for the ASEAN+4 economies along with some selected blocs is shown in Figure 1. Trade among the member nations of ASEAN+4 as against their trade with the rest of the world an increase during the period of 1995-2009 even though there was a fall in 1999.

Figure: 1 Intra-Bloc Trade (%)



Source: Compiled ASEAN Finance and Macro-economic Surveillance Unit Database, ASEAN Merchandise Trade Statistics Database, or Websites of ASEAN member States' National Statistics.

In 2009 intra-bloc trade for ASEAN+4 was 49.5 per cent. This value of intra-regional trade share is higher than the corresponding share for many of the existing trade blocs in the year of their formation. It is evident from the Table 1 that the potential of ASEAN+4 as a candidate for regional economic integration is higher than that of existing regional bloc in Asia that is ASEAN. This fact is further corroborated when the trends for intra-bloc exports and imports shown in Table 1 and Table 2 are analyzed.

Table 1: Intra Bloc Exports (%)

Year	1995	1999	2003	2009
ASEAN	25.5	22.5	22.4	24.5
ASEAN+4	35.2	31.1	35.0	39.4

Table 2: Intra Bloc Imports (%)

Year	1995	1999	2003	2009
ASEAN	17.5	21.8	22	29.2
ASEAN+4	35.2	31.1	35.0	51.1

Source: ASEAN Economic Community Chart book, 2009.

The table shows a positive difference between the levels of intra-bloc exports and imports for the proposed ASEAN+4 grouping as against the existing ASEAN. In 2009, intra ASEAN trade exports and imports was 24.5 per cent and 29.2 per cent which is much lower as compared to 39.4 per cent and 51.1 per cent of intra ASEAN+4 exports and imports respectively.

Trends in intra regional trade are further suggestive of the strength of the ASEAN+4 as a potential candidate for a regional bloc in Asia. This conclusion is further substantiated when the degree of “trade bias” among the nations of the proposed regional blocs evaluated using the Trade Intensity Index (TI)¹. The greater value of trade intensity index indicates the high potentiality of trade in between the proposed group of countries while a decreasing value would suggest diminished prospects. The TI index therefore provides additional insight into the prospects for regional economic integration. Table 3 below illustrates the change in the TI index at 3 time point in the period from 1995 to 2009.

Table: 3 Intra-regional Trade Intensity Index

Regions	1995	1999	2009
ASEAN	3.9	4.4	4.4
ASEAN+4	2.1	2.2	2.2
NAFTA	2.4	2.3	2.7

The TI index for ASEAN+4² clearly indicates the increase in the concentration of trade within the region. The TI index as shown in the table exceeds unity for all the three time points in our reference period. This is indicative of intense trade relation within ASEAN+4 regional grouping. Therefore the trends of TI index further confirm the claim of ASEAN+4 as a potential candidate for a regional trade bloc in Asia.

CONCLUDING REMARKS

In this paper alternative approach to the integration of plus four economies with ASEAN for the formation of ASEAN+4 trades have been examined in terms of their efficiency and trade intensity. On the basis of trends of intra-bloc or extra-bloc trade the study establishes the strength of ASEAN+4 as a potential trade bloc in Asia. Empirical evidence of India increasing trade with ASEAN+4 is used to justify India's inclusion in the regional trade bloc. The share of the plus four economies (India, China, Japan and South Korea) reveals a de facto market led integration for the ASEAN+3; India stands out as the distant economy in this set of countries. It is imperative therefore that any proposal for regional economic

¹ **Trade Intensity Index:** The trade intensity index (TI) is used to determine whether the value of trade between two countries is greater or smaller than would be expected on the basis of their importance in world trade. It is defined as the share of one country's exports going to a partner divided by the share of world exports going to the partner. It is calculated as:

$$T_{ij} = (x_{ij}/X_{it}) / (x_{wj}/X_{wt})$$

Where x_{ij} and x_{wj} are the values of country i 's exports and of world exports to country j and where X_{it} and X_{wt} are country i 's total exports and total world exports respectively. An index of more (less) than one indicates a bilateral trade flow that is larger (smaller) than expected, given the partner country's importance in world trade.

² Intra-ASEAN trade intensity equals : (Intra ASEAN Exports/Total World Exports) / (Total ASEAN Exports / Total World Exports)*(World Exports to ASEAN/ Total World Exports)

integration in Asia that is inclusive of India should focus on the optimal route for India's integration into the trade bloc.

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A STUDY OF LIQUIDITY, PROFITABILITY AND RISK ANALYSIS OF CEMENT INDUSTRY IN INDIA

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ABSTRACT

Liquidity and Profitability is a pre-requisite for the survival of every firm or company. The finance manager is always faced with the dilemma of Liquidity vs. profitability as these two concepts conflict in most of the financial decisions. So, the finance manager has to watch the relationship between operating risk and profitability of a company also. Hence in this article an attempt has been made to study the relationship between liquidity and profitability and between profitability & risk of selected cement companies in India. In this article, seven cement companies have been selected from BSE 500 Index on the basis of availability of data. The study has been carried out for five years period from 2003-04 to 2007-08. This study highlights that liquidity position of India cements Ltd. is the best of all companies under consideration.

KEY WORDS

DOL, Liquidity, Profitability, Risk, ROCE, ROI.

INTRODUCTION

Liquidity is a pre-requisite for the survival of every firm or company. Liquidity signifies firm's ability to meet its short-term commitments. In context of corporate business finance, liquidity refers to the length of time until assets are converted to cash. It is the ability to convert assets into cash with in a short period of time. Christy & Roden define Liquidity of an asset as "moneyness". Liquidity has two dimensions: (i) Time required to convert the Liquidity of assets into money and (ii) certainty of price realized .A firm's short-term liquidity means its ability to meet short-term obligations. The ability to convert assets into cash depends on the ability to generate profits from sale of products & services. Current ratio and Quick ratio are the two commonly used liquidity ratios of a company to judge its liquidity position.. Liquidity ratios depict the relationship of a firm's current assets to its current liabilities & thus its ability to meet maturing debts.

Profitability refers to the firm's ability to generate earnings and earnings are must for its survival & growth .Various people like owners, shareholders, managers are interested in the firm's profitability position because profit is the source from which these groups receive their dues. So, the management

uses profitability ratios as a measure of their performance. Profitability of a firm is the net result of a large number of policies & decisions .

The profitability ratios show the combined effects of liquidity, asset management and debt management policies on operating results. There are two types of profitability ratios .i.e. Profit Margin ratios and rate of return ratios. The most popular profit margin ratios are gross profit margin, operating profit margin and net profit margin. Rate of Return ratios reflect the relationship between profit & investment. The important ratios are return on assets, earning power, return on capital employed and return on equity etc.

Operating risk can be defined as the variability of EBIT (earnings before Interest & tax).The Internal & external environment in which a firm operates determines the variability of EBIT. Variability of sales and expenses are two main components of variability of EBIT. The variability of sales revenue is major determinant of operating risk. Sales of a company may fluctuate due to changes in general economic conditions, availability of raw material, technological changes, competitors, changes in consumer preferences etc. Given the variability of sales, the variability of EBIT is further affected by composition of fixed & variable expenses. Higher the proportion of fixed expenses relative to variable expenses, higher the degree of operating leverage. Operating leverage affects EBIT. High operating leverage leads to faster increase in EBIT when sales are increasing and vice versa. Hence the operating leverage causes wide fluctuations in EBIT with varying sales.

The finance manager is always faced with the dilemma of liquidity vs profitability as liquidity & profitability decisions conflict in most of the financial decisions. So finance manager has to strike a balance between two. He has to watch the relationship between operating risk & profitability of a company. So in this article an effort has been made to study the relationship between liquidity & profitability and between profitability & risk of selected cement companies.

CEMENT INDUSTRY IN INDIA

Indian Cement Industry is ranked second in the world after China with an installed capacity of 151.2 million tones per annum. The origin of Indian Cement Industry can be traced back to 1914 when the first unit was set up at Porbandar with a capacity of 1000 tonnes. Today, Cement Industry comprises of 125 large cement plants & more than 300 mini cement plants. Cement Industry in India has also made tremendous strides in technological up gradation & assimilation of latest technology. Presently 93% of total capacity in Industry is based on modern & environment friendly dry process technology. Indian Cement Industry has also acquired technical capability to produce different types of cement like ordinary Portland Cement (OPC), Portland Pozzolana Cement (PPC), Portland Blast Furnace slag Cement (PBFS), oil well cement, Rapid hardening Portland Cement, Sulphate Resisting Portland Cement, white cement etc. Some of major clusters of cement industry in India are Satna (Madhya Pradesh), Chandrapur (Maharashtra), Gulbarga (Karnataka), Yerrangunta (Andhra Pradesh), Nalgonda (Andhra Pradesh), Bilaspur (Chattisgarh) and Chandoria (Rajasthan).

The cement industry in India is dominated by around 20 companies which account for almost 70% of total cement production in India. In present year, Indian cement companies have produced 11 million tonne cement during April-Sept. 2009. It took the cement production in FY2009 to 231 million tonne. More growth in Indian cement industry is expected in coming years. It is also predicted that cement production in India would rise to 236.16 MT in FY 2011. It is also expected to rise to 262.61 MT in FY

2012. Acc, Gujarat Ambuja, Ultra tech, Grasim, India Cements, JK Group, Jaypee group, Century group, Madras Cements, Birla Corporation are the top ten cement companies of India.

LITERATURE REVIEW

A large number of studies have been done on the liquidity, profitability and risk of different industries. But here the review of studies on Cement Industry has been presented in chronological order to provide a glimpse of work done on cement Industry. Ghosh (1993) observed in his study of ten cement companies that time series pattern of Liquidity was not auto correlated. Liquidity characteristic was judged in terms of current ratio. It was observed in his study that in case of Industry firm relationship, positive auto correlation was noticed in six cases, in case of economy – firm relationship positive auto-correlation was noticed only in one case, where as in no case of relationship of Industry & economy combined and the firm, there was auto correlation. Sharma (2002) studied the financial performance of cement industry in India. Ten Cement companies were selected for the purpose of analysis. Financial analysis of the selected companies was done through various ratios such as profit margin ratio, return on capital employed, earning power ratio, capital gearing ratio & assets turnover ratio. It was recommended that cement companies should tighten their debt collection efforts & should reduce the funds tied up in receivables. Ghosh (2004) assessed the efficiency of working capital management of Indian cement companies during 1992-93 to 2001-02. To measure the efficiency of working capital management, three index values – performance Index, utilization Index & overall efficiency Index were calculated. It was found from the study that Indian Cement Industry did not perform remarkably well during the study period.

Luther (2007) conducted the liquidity, profitability and risk analysis of Madras cements Ltd. He suggested in his study that firm should take into consideration the short term liquidity also along with long-term investment decisions as if the illiquidity remains continuously, it can affect the profitability & in long run it can endanger the solvency of the firm especially during the times of financial distress. Vijaya Kumar (2002) concluded in his study that efficiency in investment management and current assets are important to improve profitability.

OBJECTIVES OF STUDY

The following are the objectives of the study:-

- (i) To assess the liquidity, profitability and risk level of selected companies.
- (ii) To find out the relationship between liquidity & profitability.
- (iii) To find out the relationship between profitability & risk.

SCOPE OF STUDY

Cement industry is a seasonal Industry. So liquidity, profitability & operating risk are very volatile in such an industry. The scope of the study includes two liquidity ratios i.e. current ratio and quick ratio to calculate the liquidity of the companies. In order to calculate the profitability of companies, return on Investment (ROI) and return on capital employed (ROCE) have been used. The degree of operating (DOL) has been used to calculate the operating risk of selected companies.

LIMITATIONS OF THE STUDY

- (i) The study is limited to five years (2003-04 to 2007-08) performance of the company.
- (ii) The data used in this study have been taken from published annual reports of cement companies. The data might have suffered from some limitations that are inherent in these statements.

SAMPLE DESIGN

The sample design consisted of total of seven companies from BSE 500 index. The companies have been selected on the basis of availability of data. The selected companies are Birla Corporation Ltd., The India Cements Ltd., Madras Cements Ltd., Dalmia Cement (Bharat Ltd.), Prism Cement Ltd, Shree Cements Ltd, Binani Cement Ltd.

SOURCES OF DATA

The data of seven cement companies for the period from 2003-04 to 2007-08 used in this study have been taken from the secondary sources i.e. published annual reports of companies and various websites such as moneycontrol.com, outlookmoney.com and moneyrediff.com.

METHODOLOGY OF STUDY

Analysis & Interpretation of financial statements was done to study the various components of liquidity, profitability and operating risk of selected companies; which helped in studying the relationship between liquidity and profitability and between profitability & risk. To study the company wise relationship between liquidity and profitability, correlation between current ratio and return on investment (ROI) and between quick ratio and return on investment (ROI) was calculated. To study the company wise relationship between profitability and operating risk of selected companies, correlation between return on capital employed (ROCE) and degree of operating leverage (DOL) was calculated. Chi square test have been applied to study the relationship between Liquidity and profitability and between profitability & risk on overall basis.

FINDINGS AND ANALYSIS

I. Determining the Liquidity, profitability and risk level of selected companies: To determine the liquidity level of selected companies, two ratios related to liquidity, namely, current ratio and quick ratio were used. Profitability levels of selected companies were determined by using two measures related to profitability, namely, return on investment (ROI) and return on capital employed (ROCE). Degree of operating leverage (DOL), which is a measure of operating risk, was used to determine the risk level of selected companies. Following is the company wise analysis of liquidity, profitability and risk level of selected companies:

1.) Birla Corporation Ltd.: The Company was incorporated in 1919 at Calcutta. Major operations of the company are in West Bengal where the company has three cement plants. Two plants of the company are in Maharashtra. During the year 2007, the company embarked upon expansion projects at Santa and Chanderia, which effectively enhanced the cement capacity by 1.70 million tones. Credit Analysis and Research Limited (CARE) has assigned CARE AA (Double A) rating to the company for Long Term Borrowing Programme. Authorized equity share capital of the company is Rs. 90 crores. For the year ended March 31, 2008 the total paid up share capital of the company was Rs. 77.01 crores. The net sales of the company during the same year were Rs. 1566.55 crores. Table 1.1 shows the performance indicators of Birla Corporation Ltd.

Table 1.1 Performance indicators of Birla Corporation Ltd.

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	1.07	0.42	1.78	7.31	9.95
2004-05	1.00	0.45	16.14	41.28	11.02
2005-06	0.92	0.52	27.77	52.54	8.13
2006-07	0.76	0.48	32.73	72.15	5.66
2007-08	0.89	0.61	49.00	100.70	7.16

The above table shows that the current ratio of the company for all the years under consideration is below the standard norm of 2:1 (Sharma, 2002). The current assets of the company are not sufficient enough to pay for the current liabilities of the company. For the period under consideration, the current ratio of the company was the least in the year 2006-07 when it came down to 0.76. The quick ratio of the company is also not satisfactory. The ratio has been below the standard norm of 1:1 (Sharma, 2002) for all the years under consideration which shows that quick assets of the company are not sufficient to pay for the current liabilities. The quick ratio increased to 0.45 in 2004-05 from 0.42 in 2003-04. In 2005-06, it went further up to 0.52. It was due to significant increase in sundry debtors. Similarly, the increase in quick ratio from 0.48 in 2006-07 to 0.61 in 2007-08 was due to a significant increase in the amount of loans and advances which showed an increase of nearly Rs. 160 crores in 2007-08 over that of the year 2006-07.

The company is showing a very good growth in profits over the years therefore profitability position of the company is satisfactory. Both of the profitability measures used .i.e., return on investment (ROI) and return on capital employed (ROCE) are showing continuous increase. In 2003-04, ROCE was 7.31 per

cent which showed significant improvement and increased to 41.28 per cent in 2004-05. In 2006-07 it went further up to 72.15 per cent. In 2007-08 also ROCE showed a significant improvement over the previous year and it went up to 100.7 per cent. Similarly, ROI increased significantly from 1.78 per cent to 16.14 per cent in 2004-05. It went further up to 27.77 per cent in 2005-06. In the year 2006-07 also, ROI of the company increased to 32.73 per cent. In 2007-08, it became 49.00 percent. The main reason for significant increase in the company's profitability over the years was continuous growth in sales revenue.

The degree of operating leverage (DOL) of the company is very high over the years thereby indicating a very high level of operating risk. DOL should either be 1 or equal to 1 but the company is having a DOL of more than 5 in all the years under study. DOL was 9.95 in the year 2003-04 when EBIT decreased by 15.03 percent as a result of 1.51 per cent decrease in sales. During the year, EBIT increased by 105.04 per cent whereas increase in sales was 9.53 per cent. It was because the increase in sales was more than increase in expenses which led to increase in company's operating profits and thereby increase in EBIT. Though DOL came down to 8.13 in 2005-06 and further down to 5.66 in 2006-07 but it rose to 7.16 in 2007-08 when EBIT increased by 204.54 per cent whereas sales increased by 28.57 per cent.

2.) Dalmia Cement (Bharat) Ltd.: Dalmia Cement Ltd. was incorporated in Tamil Nadu in 1951. The cement plants of the company rank amongst the most efficient cement plants in India. The Company's cement operations, located in Dalmiapuram, Tamil Nadu saw a significant ramp-up during 2007-08. Its brands such as Dalmia Superroof and Vajram are the preferred brands in the market and command premium over other brands. The company is a market leader in the manufacturing of cement for construction of walls of on-shore and off-shore oil wells. Oil well cement manufactured by Dalmia Cement was the first in India to receive the prestigious American Petroleum Institute (API) certification. During the year 2007-08, the company implemented the technology for manufacturing of Oil Well Cement with improved additive response. Dalmia Cement also continues to maintain its leadership position in the manufacture of high grade cement for railway sleepers, introduced in India by the company. The future plan of action for the company includes the use of alternative non conventional energy sources. For the year ended March 31, 2008 net sales of the company were Rs. 984.40 crores while the company had equity share capital of Rs. 8.55 crores. Table 2.1 shows the indicators of Dalmia Cement (Bharat) Ltd.

Table 1.2 Performance indicators of Dalmia Cement (Bharat) Ltd.

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	1.63	0.57	5.82	9.98	-3.24

2004-05	1.75	0.69	7.24	11.07	-2.09
2005-06	1.72	0.81	8.58	8.29	-0.98
2006-07	1.47	0.84	19.81	13.55	6.93
2007-08	1.07	0.71	30.38	24.94	2.31

Current ratio was above 1.5 from the year 2003-04 to 2005-06 but thereafter it went down to 1.47 in the year 2006-07 and further down to 1.07 in 2007-08. In the year 2006-07 the current ratio came down to 1.47 from 1.72 in 2005-06. It showed that increase in current ratio of the company was the least in 2007-08 when it came down to 1.07.

The quick ratio of the company is also below the standard quick ratio of 1:1 for all the years under consideration. Though the ratio was consistently increasing from 2003-04 to 2006-07 when it increased from 0.57 to 0.84 respectively but it went down to 0.71 in 2007-08. Though the liquid assets of the company showed an increase in 2007-08 but the increase in current liabilities was more than the increase in quick assets therefore, causing a decline in quick ratio of the company.

The profitability position of the company has been showing an improvement over the years as both ROI and ROCE are showing an increase over the previous years. Though ROCE showed a decline in 2005-06 when it came down to 8.29 percent from 11.07 percent in 2004-05. The main reason for the decrease in ROCE in 2005-06 was the decrease in GP ratio of the company which came down to 0.324 over that of 2006-07 when it was 0.375. ROCE increased to 13.55 per cent in 2006-07 and further to 24.94 per cent 2007-08 due to nearly 76 per cent growth in sales during 2006-07 and 121 per cent growth in sales during 2007-08. Similarly, ROI increased from 5.82 per cent in 2003-04 to 7.24 per cent in 2004-05. It became 8.58 per cent in 2005-06. In 2006-07, ROI was 19.81 per cent which went further up to 30.38 per cent in 2007-08.

The company is having a negative degree of operating leverage (DOL) from the years 2003-04 to 2005-06 which thereafter became positive. In the year 2003-04, DOL was -3.24 when EBIT decreased by 17.42 per cent whereas sales increased by 5.38 per cent. In 2004-05, DOL became -2.09. During the year, sales decreased by 4.42 per cent but EBIT increased by 9.23 per cent. It was due to increase in stock adjustments during the year which became Rs. 27.44 crores in 2003-04 over those of -40.00 crores in 2003-04. This resulted in increase in total income of the company which was more than increase in expenses. Thus, it led to increase in company's EBIT. In 2005-06, DOL came down to -0.98 but it rose to 6.93 in 2006-07 indicating an increase in operating risk of the company. In 2007-08, DOL came down to 2.31. During the year, BIT increased by 165.54 per cent whereas sales of the company went up by 71.7 per cent.

3.) Binani Cement Ltd.: Binani Cement Ltd. (BCL) is the flagship company of the Binani group which has diverse manufacturing interests in cement, zinc and glass Fibre. The Company was incorporated in Kolkata, West Bengal on January 15, 1996 as Dynasty Dealer Private Limited. The name of the company was changed to Binani Cement Private Limited. Subsequently, the company was converted into a public company and the name was changed to Binani Cement Limited in 1998. The Company's cement plant is in Pindwara, District Sirohi, Rajasthan. The company is also setting up two additional captive power plants having capacity of 22.3 MW each in 2 phases at its existing location at Binanigram. The paid up share capital of the company for the year ended March 31, 2007 was Rs. 203.10 crores which consisted of

equity capital only. Net sales of the company for the same year were Rs. 678.44 crores. Table 3.1 shows performance indicators of Binani Cement Ltd.

Table 1.3 Performance Indicators of Binani Cement Ltd.

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	1.63	1.05	0.47	10.32	1.37
2004-05	2.03	1.43	1.87	10.57	2.29
2005-06	3.09	2.7	2.75	9.09	0.42
2006-07	2.95	2.61	20.92	12.65	4.05
2007-08	0.94	0.61	31.74	18.59	2.66

Table 1.3 reveals that the current ratio of the company is satisfactory except the year 2007-08 when it came down to 0.94. For the year 2003-04, current ratio of the company was 1.63. Thereafter it increased to 2.03 in the year 2004-05. This increase was mainly on account of increase in loans and advances which increased from Rs. 57.17 crores in 2003-04 to Rs. 86.18 crores in 2004-05. The current ratio further increased to 3.09 in the year 2005-06. Loans and advances again showed an increase of nearly Rs. 136 crores over the previous year. For the year 2006-07, current ratio of the company was 2.95 which came down to 0.94 in 2007-08. It was due to increase in current liabilities, loans and advances from Rs. 78.64 crores in 2006-07 to Rs. 241.37 crores in 2007-08. The quick ratio of the company has been above the standard ratio of 1:1 for the four years period from 2003-04 to 2006-07. In the year 2007-08 it came down to 0.61.

The profitability of the company has been showing an improvement over the years as both ROI and ROCE have been showing an increase over the previous years. The only exception was the year 2005-06 when ROCE decreased to 9.09 per cent over that of 10.57 per cent in the year 2004-05. ROI was 0.47 per cent in 2003-04 which increased to 1.87 per cent in 2004-05 and to 2.75 per cent in 2005-06. In 2006-07 and 2007-08, ROI showed a significant improvement when it rose to 20.92 per cent and 31.74 per cent respectively. The improvement in profitability was due to continuous increase in sales and significant decrease in manufacturing expenses in the later years. It can be seen from the table that increase in ROI has been much more significant than increase in ROCE over the years. It is due to the reason that shareholders' funds did not increase as much as net capital employed did but the net profits of the company increased significantly during the period under consideration.

The degree of operating leverage (DOL) of the company has remained from low to moderate over the years, whereas in the year 2006-07, it increased to 4.05 which was its highest level for the period under

consideration. DOL was 1.37 in 2003-04 when EBIT increased by 12.31 per cent as a result of 9.02 per cent increase in sales of the company. In 2004-05, DOL increased to 2.29. In 2005-06, it decreased to 0.42 thereby indicating a low operating risk. In the next year i.e., in 2006-07, DOL increased to 4.05. During the year, the increase in EBIT was 47.46 per cent and sales increased by 11.73 per cent. In 2007-08, DOL came down to 2.66.

4.) The India Cements Limited: The India Cements Limited (ICL) was incorporated in 1946 at Chennai. All the factories and plants of the company are located in Andhra Pradesh. In the year 2000, the company entered into an agreement with Panyam Cement and Mineral Industries Ltd. for distribution and marketing of cement. The company has taken up various projects on hand for up gradation/expansion of its cement capacity and also to optimize energy consumption levels. The cement production for the financial year 2007-08 of the company was at 84.24 lakh tones, representing a capacity utilization of 99% as compared to 72.62 lakh tones in the previous year. For the year ended March 31, 2007 share capital of the company was Rs. 220.37 crores which comprised only of equity share capital. Net sales of the company during the same year were Rs. 2255.21. Table 4.1 shows performance indicators of The India Cements Limited.

Table 1.4 Performance indicators of The India cements Limited

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	2.13	1.64	-46.13	4.39	7.49
2004-05	3.34	2.53	-07.05	2.19	14.14
2005-06	2.88	2.16	0.35	5.04	9.18
2006-07	3.20	2.62	2.58	6.97	1.29
2007-08	3.51	2.97	21.68	16.67	4.74

Table 1.4 shows that the liquidity position of the company is satisfactory since current ratio of the company is above the standard current ratio of 2:1 for all the years under consideration. Current ratio was 2.13 in 2003-04 which increased to 3.34 in 2004-05. This was due to the reason that current liabilities of the company fell from Rs. 707.26 crores in 2003-04 to Rs. 452.85 crores in 2004-05. Current ratio for the year 2005-06 was 2.88 which increased to 3.2 in 2006-07 and further increased to 3.51 for 2007-08. The main reason for increase in current ratio in 2007-08 was the increase in sales due to which cash and bank balance increased from 2.80 crores in 2006-07 to Rs. 216.15 crores in 2007-08. Quick ratio of the company has also been above the standard quick ratio for all the years under study. It increased

from 1.64 in 2003-04 to 2.53 in 2004-05. This increase was due to the increased in sundry debtors and decrease in current liabilities over the previous year. Quick ratio became 2.16 in 2005-06 which increased to 2.62 in 2006-07 and further up to 2.97 in 2007-08.

The return on investment (ROI) was -46.13 per cent in 2003-04 which shows that the profitability position of the company was very bad at that time. It was due to the reason that operating profit of the company was only Rs. 39.85 crores and it was not sufficient to provide for interest and depreciation charge. ROI became -07.05 per cent in 2004-05. In the year 2005-06, ROI was 0.35 per cent. Thereafter it became 2.58 per cent in 2006-07 but it showed good improvement in 2007-08 when it increased to 21.68 per cent. This can be due to increase in sales from Rs. 1829.44 crores in 2006-07 to Rs. 2610.75 crores in 2007-08 showing an increase of nearly 43 per cent. Return on capital employed (ROCE) is also increasing over the years. It went down to 2.19 per cent in 2004-05 from 4.39 per cent in 2003-04 but increased to 5.04 per cent in 2005-06. In the year 2006-07, ROCE became 6.97 per cent and in 2007-08 it increased to 16.67 per cent. Increase in ROI of the company has been very significant as compared to increase in ROCE because the profitability of the company increased significantly whereas the increase in shareholders' funds was lesser than the increase in net capital employed.

The company is having a very high degree of operating leverage (DOL) indicating that the level of operating risk is very high. Ideally, the ratio should be near to 1 but it has remained at high levels over the years. The year 2006-07 was an exception when DOL came down to 1.29. In 2003-04, it was 7.49 when decrease in sales by 15.75 per cent led to decrease in EBIT by 118.02 per cent. In 2004-05, DOL increased to 14.14. During this year, 19.41 per cent increase in sales led to 274.44 per cent increase in EBIT of the company. It was due to the reason that proportionate increase in total expenses was less than proportionate increase in sales which accounted for the increase in gross profit (GP) ratio of the company and also in EBIT. In 2005-06, DOL was 9.18 in 2006-07, it went further down to 1.29. During the year, sales increased by 32.66 per cent which increased the EBIT by 42.08 per cent. In 2007-08, DOL rose again and became 4.74.

5.) Madras Cement Ltd.: Madras Cement Ltd. (MCL) is the flagship company of the Ramco group. It was incorporated in 1957 and commenced production on its first cement plant in Tamil Nadu in 1961. The plant had a capacity of 200 tpd and operated on wet process technology. MCL has incurred considerable capital expenditure on modernization. In 1986, the company seized on the opportunity of putting up a plant at Jayantipuram, Andhra Pradesh, which was close to limestone reserves at Singareni Collieries. Its third cement plant went on stream at Alathiyur Tamil Nadu in 1997. The Company is establishing additional clinkering facility at Jayanthipuram by installing a 4000 tpd kiln. The clinkering process will be integrated with the existing production facilities, leading to an increase of cement manufacturing capacity by 2 million TPA. For the year ended March 31, 2008, the company was having equity share capital of Rs. 12.08 crores and net sales of the company were Rs. 2567.37 crores. Table 5.1 shows the performance indicators of Madras Cements Ltd.

Table 1.5 Performance indicators of Madras Cements Ltd.

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	0.76	0.53	4.81	12.07	2.06
2004-05	0.70	0.55	11.41	15.02	1.27
2005-06	0.88	0.51	16.70	13.94	-1.44
2006-07	0.77	0.53	20.09	20.19	1.51
2007-08	0.99	0.78	46.22	46.11	4.01

Table 1.5 shows that the current ratio of the company for all the years under consideration is below the standard norm of 2:1. The current assets of the company are not sufficient enough to pay for the current liabilities of the company. It shows that the liquidity position of the company is not satisfactory. The current ratio decreased from 0.76 in 2003-04 to 0.7 in 2004-05. Current assets increased by 4.16% in 2004-05 over the previous year but current liabilities showed an increase of 12.26%. The current ratio of the company went up in 2005-06 and became 0.88. It was due to increase in inventories which increased to Rs. 131.13 crores in 2005-06 over those of Rs. 52.74 crores in 2004-05. Thereafter current ratio decreased to 0.77 in 2006-07 but it went up to 0.99 in 2007-08. Quick ratio also remained below the standard norm of 1:1 for all the years under consideration. Quick ratio was in the range of 0.5 to 0.55 for the years 2003-04 to 2006-07 but it increased to 0.78 in 2007-08. It was due to increase in the amount of sundry debtors and cash and bank balance during this period.

The company is having a good profitability position as both return on investment (ROI) and return on capital employed (ROCE) have been showing a consistent increase over the years. ROI was 4.81 per cent in 2003-04 which increased to Rs. 46.22 per cent in 2007-08. It was due to increase in sales revenue which increased from Rs. 750.68 crores in 2003-04 to Rs. 1803.54 crores in 2007-08 showing an increase of 140 per cent over the years. ROCE also increased from 15.02 per cent in 2004-05 to 46.11 per cent in 2007-08. Though ROCE decreased in 2005-06 to 13.94 per cent over that of 15.02 per cent in 2004-05 because of increase in sales being less than increase in expenses which led to decrease in operating profit to Rs. 150.35 crores in 2005-06 over that of Rs. 166.13 crores in 2004-05 but later, ROCE increased to 20.19 per cent in 2006-07 and further up to 46.11 per cent in 2007-08.

The degree of operating leverage (DOL) of the company has remained from low to moderate over the years except the year 2007-08 when it rose to 4.01. In 2003-04, DOL of the company was 2.06 indicating that 1 per cent change in sales could lead to 2.06 per cent change in EBIT of the company. In 2004-05, it decreased to 1.27 since increase in sales by 11.02 per cent led to increase in EBIT by 13.99 percent. In 2005-06, DOL came down and it became negative at -1.44. It was due to the reason that sales increased by 5.17 per cent but EBIT decreased by 7.46 per cent. The reason for decrease in EBIT was that total expenses increased proportionately more than increase in sales which led to decline in operating profit over the previous year resulting in decline in EBIT. In 2007-08, DOL increased further and became 4.01. In

this year, sales increased by 56.06 per cent whereas EBIT increased by 224.97 per cent thereby increasing the DOL.

6.) Prism Cement Ltd. : Prism Cement Limited is the flagship company of Raheja group. The company was incorporated in 1992 under the name of Karan Cement Limited by Dr. B.V. Raju and his associates. The name of the company was subsequently changed to Prism Cement Limited in 1994. The company was started to cater mainly to north and central India. It started its south Indian operations in 2002. The Company increased its share of PPC production from 72 per cent during the year 2006-07 to 87 per cent during the year 2007-08. The continuous emphasis on efficient fund management coupled with the stable operations and growth in cement demand during the past couple of years has enabled the company to wipe out the balance accumulated losses of Rs. 44.90 crores and repay its entire outstanding debt of Rs. 107.93 crores during 2007-08. For the year 2007-08, sales of the company were Rs. 767.92 crores while the company had the share capital of Rs. 298.25 crores which comprised of equity capital only. Table 1.6 shows the performance indicators of the company.

Table 1.6 Performance indicators of Prism Cement Ltd.

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	1.41	0.31	-18.21	7.14	2.49
2004-05	1.33	0.31	-3.59	12.00	7.62
2005-06	1.23	0.29	13.49	22.71	2.66
2006-07	1.01	0.32	24.50	57.63	1.91
2007-08	0.60	0.24	46.87	115.95	4.58

Table 1.6 reveals that the company is not having a good short term liquidity position as current ratio of the company is below the standard norm of 2:1 for all the years under consideration. It shows that current assets are not sufficient to pay for the current liabilities. Current ratio is consistently declining over the years. In 2003-04, current ratio was 1.41 which went down to 1.33 in 2004-05. The decrease was due to a decrease in the amount of sundry debtors and loans and advances over the previous year. In 2005-06, the current ratio went further down to 1.23 while in 2006-07 it became 1.01. The decline shows that current liabilities increased more than current assets. The current ratio of the company was the least in 2007-08 when it came down to 0.6. The reason for decrease was a significant decrease in the amount of loans and advances which came down to Rs. 45.85 crores over those of Rs. 119.31 crores in 2006-07. The liquidity position of the company as reflected by the current ratio, is not satisfactory. Like

current ratio, quick ratio of the company has also been below the standard quick ratio of 1:1. During the years under consideration, quick ratio has been in the range of 0.24 to 0.32. Quick ratio in 2004-05 was the same as that of 2003-04 which stood at 0.31. In the year 2005-06 it declined to 0.29 as a result of decrease in sundry debtors and cash and bank balance. In 2006-07, it increased to 0.32 because of increase in the amount of sundry debtors to Rs. 14.55 crores over that of Rs. 12.89 crores during previous year and increase in cash and bank balance to Rs. 16.80 crores over that of Rs. 7.03 crores in 2005-06. In 2007-08, quick ratio declined to 0.24.

Like other companies under study, profitability position of the company has been showing improvement over the years. Though ROI was negative in 2003-04 and 2004-05 but later it increased to 13.49 per cent in 2005-06 and further to 46.87 per cent in 2007-08. Similarly, ROCE also increased from 7.14 per cent in 2003-04 to 115.95 per cent in 2007-08. The significant increase in profitability has been possible because of a consistent increase in sales revenue of the company which went up from Rs. 325.72 crores in 2003-04 to Rs. 767.92 crores in 2007-08. Though it led to increase in expense also but proportionate increase in sales was higher than the proportionate increase in expenses which led to significant increase in the company's profitability.

The company is maintaining a moderate to high degree of operating leverage (DOL) over the years thereby having a moderate to high level of operating risk. DOL was 2.49 in 2003-04 when EBIT decreased by 19.55 per cent as a result of decrease in sales by 7.84 per cent. DOL became 7.62 in 2004-05 but came down to 2.66 in 2005-06. During the year 2005-06 percentage change in EBIT was 41.87 while it was 130.23 in the year 2004-05 but percentage change in sales was 15.75 in 2005-06 as compared to 17.08 in 2004-05. Therefore, it accounted for the decrease in the degree of operating leverage. For the year 2006-07, DOL was 1.91 but it increased to 4.58 in 2007-08 due to percentage change in EBIT being 155.98 which was much higher than percentage change in sales which stood at 34.09.

7.) Shree Cements Ltd.: Shree Cements Ltd. was promoted by the Bangur Group in 1979. Headquartered in Kolkata; the company presently has plants located at Bewar and Ras in Rajasthan. Shree Cements Ltd. serves prime markets in North India. The company's multi-brand portfolio consists of both Ordinary Portland Cement (OPC), and Portland Pozzolana Cement (PPC). OPC and PPC offers like Shree Ultra Ordinary Portland Cement, Shree Ultra Jung Rodhak, Bangur Cement and the newly introduced Tuff Cemento 3556. Impressive turnover growth has followed the company's capacity buildup. The capacity utilization was more in 2007-08 than 2006-07. Increase in research and development expenditure has led to significant increase in company's profitability and revenues. The company made very huge transfers to reserves in the year 2007-08 which led to increase in the revenues and profitability of the cement industry as a whole and same was true for Shree Cements also. Shree Cements Ltd. is India's second fastest mid-sized growing company. At the end of the financial year 2007-08, the company had sales of Rs. 1403.04 crores whereas the share capital of the company was Rs. 34.84 crores comprising equity capital only. Table 7.1 shows performance indicators of Shree Cements Ltd.

Table 1.7 Performance indicators of Shree Cements Ltd.

Ratios Years	Current Ratio	Quick Ratio	Return on investment (ROI) in %	Return on capital employed (ROCE) in %	Degree of operating leverage (DOL)
2003-04	1.23	0.70	1.97	7.32	-1.72
2004-05	1.42	0.93	3.83	9.60	18.89
2005-06	1.01	0.52	8.24	10.30	-0.75
2006-07	0.88	0.42	5.24	7.16	0.82
2007-08	2.30	1.82	35.13	18.11	2.02

Table 1.7 shows that the current ratio of the company has been less for all the years under consideration except the year 2007-08 when it was 2.3. The liquidity position of the company is not satisfactory for all the years except the year 2007-08. Current ratio was 1.23 in 2003-04 which rose to 1.42 in 2004-05 as a result of increase in loans and advances which became Rs. 75.64 crores in 2004-05 over those of Rs. 42.46 crores in 2003-04. In 2005-06, current ratio declined to 1.01 due to a significant decrease in the amount of loans and advances. Quick ratio of the company has also been low for most of the period. It was more than the standard ratio of 1:1 only once during the period under study. Quick ratio increased to 0.93 in 2004-05 from 0.7 in 2003-04 but in 2005-06 it went down to 0.52. Thereafter in 2006-07 also it went further down to 0.42 but in 2006-07 it increased to 1.82 as a result of significant increase in quick assets.

The company is having a good profitability position in the later years of the period under study. The profitability has been showing a consistent increase over the years. Return on investment (ROI) was 1.97 per cent in 2003-04 but it increased to 35.13 per cent in 2007-08. Similarly return on capital employed (ROCE) also increased from 7.32 per cent in 2003-04 to 18.11 per cent in 2007-08. Increase in profitability was due to increase in sales of the company which increased significantly from Rs. 582.43 crores in 2003-04 to Rs. 1613.14 crores in 2007-08 showing an increase of 176.97 per cent over the years. The degree of operating leverage (DOL) of the company has been very inconsistent over the period. DOL was -1.72 in 2003-04 because sales increased by 8.9 per cent but EBIT declined by 15.31 per cent. In 2004-05, DOL went very high when it became 18.89 indicating a very high level of operating risk. It showed that 1 per cent decline in sales could lead to 18.89 per cent decline in EBIT. During 2004-05, sales increased by 2.07 per cent whereas EBIT increased by 39.12 per cent. It was due to the reason that power and fuel cost went down significantly from Rs. 119.40 crores in 2003-04 to Rs. 89.78 crores in 2004-05. It led to decrease in total expenses which increased the EBIT. DOL rose in 2006-07 and became 0.82. In 2007-08, it went further up to 2.02. During the year, sales increased by 101.93 per cent whereas EBIT increased by 205.76 per cent.

II. (a) Relationship Between Liquidity and Profitability (Company wise): Company wise relationship between liquidity and profitability was determined by calculating the correlation between current ratio

and return on investment (ROI) and between quick ratio and return on investment (ROI). Thereafter, t-test was applied to check the significance of the correlation coefficient at 5% level of significance and 3 degrees of freedom with the null hypothesis being that there is no significant correlation between respective variables i.e., the variables are uncorrelated in the population.

Correlation Analysis: Correlation Analysis is a statistical tool used to describe the degree to which one variable is related to another. The co-efficient of correlation [®] measures the degree of relationship between two series. Following is the formula to calculate coefficient of correlation:

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

Where N= Number of variables

X = Liquidity variable or operating risk variable

Y = Profitability variable

Sign of r indicates the direction of the relationship between variables. The value of r ranges from -1 to +1. If r=-1, there is inverse relationship between the variables and if r = + 1, there is a direct relationship between variables.

Testing the significance of correlation coefficient:

To test the hypothesis that the correlation coefficient of the population is zero.i.e, the variables in the population are uncorrelated, the following test was applied:

$$T = \frac{r}{\sqrt{1-r^2}} \cdot \sqrt{n-2}$$

Here t is based on (n-2) degrees of freedom. If the calculated value of t exceeds t0.05 for (n-2) degrees of freedom, the value of r is said to be significant at 5% level of significance. If t < t0.05, the data are consistent with the hypothesis of an uncorrelated population (Gupta,2005).

Table 2.1 shows Coefficients of Correlation between current ratio and return on investment (ROI) and between quick ratio and return on investment (ROI)

S. No.	Name of Company	Correlation Between Current Ratio and Return on Investment(ROI)	Correlation Between Quick ratio and Return on Investment (ROI)
1.	Birla corporation ltd.	-0.74*	0.93*
2.	Dalmia Cement	-0.96*	0.33

	(bharat) ltd.		
3.	Binani cement ltd.	-0.36	-0.24
4.	The India cements ltd.	-0.91*	0.92*
5.	Madras cement Ltd.	-0.85*	0.91*
6.	Prism Cement Ltd.	-0.96*	-0.71*
7.	Shree Cement Ltd.	0.88*	0.89*

*Significant at 5% level of significance.

(b) Relationship between profitability and risk (Company wise) : Company wise relationship between profitability and operating risk was determined by calculating the correlation between return on capital employed (ROCE) and degree of operating leverage (DOL) of the selected companies. Thereafter, t-test was applied to check the significance of the correlation coefficient at 5% level of significance and 3 degrees of freedom with the null hypothesis being that there is no significant correlation between DOL and ROCE. Following table shows the coefficients of correlation between DOL and ROCE of selected companies.

Table 2.2 shows Coefficients of correlation between degree of operating leverage (DOL) and return on capital employed (ROCE)

S.No.	Name of Company	Correlation btw (DOL) and (ROCE)
1	Birla corporation Ltd.	-0.71*
2	Dalmia corporation (bharat)	0.44
3	Binani cement ltd.	0.52*
4	The Indian cement ltd.	-0.57*
5	Madras cement ltd.	0.73*
6	Prism cement ltd.	-0.05
7	Shree cement ltd.	0.008

* Significant at 5% level of significance

(III) Relationship between Liquidity and Profitability (Overall):

Chi square test: Chi square test has been applied to check the relationship between liquidity and profitability and between profitability and operating risk on overall basis. To study the relationship between current ratio and return on investment and between quick ratio and return on investment, all 35 values of respective variables for all the companies and for all the years were first arranged in ascending order and thereafter median value was found. After finding the median value all 35 values were assigned 'high' or 'low' indicators by comparing them with the median value. Thereafter, a table was prepared showing association between the variables to study the relationship between respective variables. Chi square test was applied on that table with the null hypothesis being that there is no significant relationship between respective variables. Alternate hypothesis was that there is significant relationship between the variables. Following formula was used for calculating Chi square:

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

With (r-1) (c-1)= degrees of freedom

Where O_i = Observed frequency

E_i = Expected frequency

r=number of rows

c= number of columns

Chi square test has been applied to study the overall relationship between liquidity and profitability. Association of both of the liquidity measures with ROI have been tested separately.

Following table shows the association between current ratio and ROI:

Table 3 (a) shows Association between current ratio and ROI

ROI / Current Ratio	HIGH	LOW	TOTAL
High	6	13	19
Low	12	4	16
Total	18	17	35

The calculated value of chi square for above table has been found to be 6.55 which is more than the table value of 3.84 at 5% level of significance. It has led to the rejection of null hypothesis and it has been considered that there is significant relationship between current ratio and ROI on overall basis. Following table shows the association between quick ratio and ROI:

Table3 (b) Association between quick ratio and ROI

ROI \ Quick Ratio	HIGH	LOW	TOTAL
High	9	10	19
Low	9	7	16
Total	18	17	35

The calculated value of chi square for table 3(b) has been found to be 0.266 which was less than its table value of 3.84 at 5% level of significance. Therefore, null hypothesis has been accepted and it has been concluded that there is no significant relationship between quick ratio and ROI on overall basis. It can be seen from the table 3(b) that ROI and quick ratio have not been following a consistent co-movement which led to the conclusion that the relationship between the two variables is not significant.

Relationship between Profitability and Risk (Overall) : To study the overall relationship between profitability and operating and operating risk, following table shows, the association between return on capital employed (ROCE) and degree of operating leverage (DOL):

Table3 (c) Association between ROCE and DOL

ROCE \ DOL	HIGH	LOW	TOTAL
High	13	6	19
Low	8	8	16

Total	21	14	35
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The calculated value of chi square for the table 3(c) has been found to be 1.22 which is less than its table value of 3.84 at 5% level of significance. Therefore, null hypothesis has been accepted and it has been concluded that overall there is no significant relationship between profitability and risk.

The correlation between current ratio and return on investment was found to be significant in case of six out of seven companies under consideration. The correlation between the two variables was found to be non significant for Binani Cement Ltd. which showed a correlation of – 0.36 between current ratio and return on investment whereas it was found to be significant in other five companies. Dalmia Cement Ltd. and Binani Cement Ltd. were having a non significant correlation between quick ratio and return on investment. The correlation between return on capital employed and degree of operating risk was the highest for Madras Cements Ltd. which was having a correlation of 0.73 between profitability and risk whereas Prism Cement Ltd. was having correlation of -0.05 between operating risk and profitability.

The overall relationship between current ratio and return on investment was found to be significant at 5% level of significance. It has led to the conclusion that there is a consistent co-movement between current ratio and return on investment .The relationship between return on capital employed and degree of operating leverage was also found to be non significant on overall basis.

CONCLUSION

The boom in the infrastructure sector in the last few years has accounted for a significant increase in the profits of cement companies. The profitability position of all the companies has been showing improvement over the previous years. It has been possible due to a considerable increase in sales revenues of all the companies over the period under consideration. Of all the companies under considerations, liquidity position of The India Cements Ltd. was the best since both of the liquidity ratios used were above their respective standards. Current ratio and quick ratio of Madras Cements Ltd. were below their standard levels for all the years under consideration. Degree of operating leverage (DOL) was high in case of Birla Corporation Ltd. and The India Cements Ltd. thereby indicating a high level of operating risk with these companies. Binani Cement Ltd. was having a moderate amount of operating risk.

The correlation between liquidity and profitability was the highest in case of The India Cements Ltd. which was having a high degree of positive correlation between current ratio and ROI as well as quick ratio and ROI and the values of correlation in both cases were found to be significant at 5% level of significance. It showed that liquidity is positively affecting the profitability of the company. The correlation between current ratio and ROI and between quick ratio and ROI was the lowest in case of Binani Cement Ltd. as both of the correlation coefficients were showing negative correlation between liquidity and profitability. Also, both the correlation coefficients were found to be non significant at 5% level of significance.

The correlation between profitability and risk was found to be highest in case of Madras Cements Ltd. which was having a correlation of 0.73 between DOL and ROCE. The value of correlation coefficient was found to be significant at 5% level of significance which showed that increase in operating risk is leading to increase in the company's profitability. The value of correlation coefficient was the lowest in case of Prism Cement Ltd. which was having a correlation of -0.05 between DOL and ROCE and value of

correlation was found to be non significant at 5% level of significance. It led to the conclusion that operating risk and profitability were uncorrelated in case of Prism Cement Ltd.

The overall relationship between current ratio and ROI was found to be significant at 5% level of significance whereas it was found that the overall relationship between quick ratio and ROI was not significant at 5% level of significance. It has been observed from study that some companies like Birla Corporation Ltd. and Dalmia Cement (Bharat) Ltd. are having negative correlation between current ratio and ROI but positive correlation between quick ratio and ROI which shows that non quick assets are adversely affecting the profitability of these companies. It is, therefore suggested that these companies should manage their inventories effectively.

The liquidity ratios of some companies like Madras Cements Ltd. are very low. This can endanger the short term solvency of the company. The company should take the required measures to improve its liquidity position and to maintain a stable liquidity position. The level of operating risk is very high in case of Birla Corporation Ltd. and India Cements Ltd.. This need to be checked as a high degree of operating leverage is good when revenues are rising but at the times when revenue is falling, high degree of operating leverage can adversely affect the profitability of the company.

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BASE RATE: THE NEW BENCHMARK RATE**PROF. REKHA DHIAYA**

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DELHI**ABSTRACT**

Consumers didn't know the manner in which the benchmark rate—more commonly known as the Benchmark Prime Lending Rate (BPLR)—is computed. Benchmark Prime Lending rate is a term applied to a reference interest rate used by banks. The BPLR failed to construct sync with the changing market conditions. BPLR does not sufficiently respond to changes in monetary policy. The Reserve Bank announced the constitution of the Working Group on BPLR in the Annual Policy Statement of 2009-10. The Base Rate serve as the reference benchmark rate for floating rate loan products, apart from the other external market benchmark rates.

In this paper an attempt has been made to study the problems with BPLR as benchmark rate that ultimately led to its replacement with Base rate. Furthermore, the problems with Base rate that can hamper its successful implementation are studied. The other various aspects analysed were finding out the possibility to lend below base rate with the proposed system.

KEY WORDS

Base rate, BPLR, Lending, RBI, Benchmark rate

1. INTRODUCTION

Think of a situation in which you have taken a home loan last year and paying 16 per cent interest rate for 20 years and your neighbor also followed your foot steps one year later but surprisingly he has availed the service at 14% interest rate for 15 years. How can a lending institution lend to a new customer at a lower rate even though for a short period but not offer the same rate to an old customer who has been regularly servicing his loan? This was the state of affairs that sent the wave of restlessness not only to the individuals but to the banking sector officials that ultimately led to the replacement of the benchmark rate. Consumers didn't know the manner in which the benchmark rate—more commonly known as the Benchmark Prime Lending Rate (BPLR)—is computed. Most retail loans especially floating rate home loans are linked with this benchmark rate. Although public sector banks have a common BPLR across loan products but, in private sector banks there are different benchmarks for different products.

Mr. M D Mallya, Chairman and managing director of Bank of Baroda said in an interview given to a financial daily in August 2009 that *“although BPLR is a benchmark, the banks do quote their lending rates at less than BPLR levels. As many as 35% of our loans are given at below BPLR. I suppose the Reserve Bank of India, too, believes that BPLR as a concept in the Indian banking system needs a radical change now”*. No doubt for a long time BPLR (Benchmark Prime Lending Rate) has lost its significance. The BPLR was gradually becoming immaterial as the benchmark for bank lending, negating the reason for its existence. Banks were generously lending at 3-4 percentage points higher or lower than the BPLR, depending on the borrower. This also created a huge transparency problem, as borrowers had no standard to refer to. Therefore responding to the call that banks do not set their lending rates in a scientific and transparent manner, RBI's verdict to ask banks to price their loans using a *base rate* rather than BPLR from April 1, 2010, is welcome. The proposed system will replace the existing system of benchmark prime lending rates (BPLR) with base rates. The RBI working group headed by Mr. Deepak Mohanty, Executive Director, RBI recommended that the nomenclature be scrapped and a new benchmark rate known as base rate should replace it.

2. OBJECTIVES OF STUDY

The study has following objectives:

- To study the problems with BPLR as benchmark rate.
- To analyse the concepts and benefits of Base rate.
- To find out the possibility to lend below base rate with the proposed system.

3. PROBLEMS RELATED TO BENCHMARK PRIME LENDING RATE

Benchmark Prime Lending rate is a term applied to a reference interest rate used by banks. The term indicates the rate of interest that banks charge (or we can say they are expected to charge) their most

credit-worthy customers. According to the Reserve Bank of India banks are free to fix the Benchmark Prime Lending Rate (BPLR) for credit limits over Rs.2 lakh with the approval of their respective Boards. Banks are free to decide the BPLR but their interest rates should have a reference to the BPLR fixed. BPLR has to be declared and made uniformly applicable at all the branches.

The BPLR is the rate offered to the best borrower, so no one would expect any loans to be made below the BPLR and being a floating rate, it should respond to changes in the RBI's policy rates. Unfortunately neither expectation has been met for several years now. Sub-BPLR lending has become the norm — nearly 70% of all loans are today below the BPLR. It is difficult for the apex bank to have a clear picture of trends in lending rates by looking at BPLRs. The range of banks' BPLRs is pretty wide stretching over 4%. The BPLR failed to construct sync with the changing market conditions. Incidentally, one-year deposit rates have been coming down steadily in recent months after the crisis broke, and are hovering at between 5% and 6%. The BPLR has failed to keep pace with that decline, as a benchmark lending rate ought to.

Typically, in a falling interest rate scenario, banks and lending institutions increase the spread to give the benefit of falling interest rate only to new customers. However, in an increasing interest rate scenario, banks increased the BPLR itself. With the help of a hypothetical example we can have a better understanding of the concept

- *Falling Interest Rate Scenario:* When rates fall, banks typically increase the spread. So, if the spread earlier was 2 per cent, if the rates fall, they would increase the spread to, say, 3 per cent. An old customer will keep paying the old rate, i.e., 10 per cent as the BPLR is unchanged, but a new customer pays 9 per cent.
- *Rising Interest Rate Scenario:* When rates move up, banks increase the BPLR. So, if the earlier BPLR was 12 per cent, the bank could increase this to 13 per cent. This way, rates for all customers go up. From the above example, if the customer was earlier servicing the loan at 10 per cent when the BPLR was 12, as the BPLR moves to 13, the rate of interest for him also moves up to 11 per cent.

BPLR does not sufficiently respond to changes in monetary policy. Lending rates don't fall when the RBI cuts policy rates. For example, RBI reduced its benchmark lending rate by 425 basis points in the last one year, but banks reduced their BPLR by about 200 basis point cut. This was mainly because bulk of their lending was below their BPLR. This tendency of banks to lend at sub-BPLR rates on a large scale was the most critical aspect. Although, prime rates of Indian banks ranged between 11 percent and 15.75 percent, yet three-fourths of their total loans are made below these levels. As per the study made by working group "An examination of the data on sub-BPLR lending reveals that the share of sub-BPLR lending (excluding export credit and small loans) for scheduled commercial banks, which was at 28 per cent in March 2002, increased to 77 per cent in September 2008.

3.1 REASONS TO TRADE LEND THE BPLR

There could be many reasons for this practice of trading below BPLR in use but the very basic answer lies in the formula that calculates BPLR. This formula for arriving at BPLR takes in to account actual cost of funds that is weighted average of all historical costs, operating cost, margins to cover provisions and

profit. When the policy rate declines, only incremental costs change significantly and the actual cost of funds changes very slightly. Banks cannot afford to lower their BPLR as that would result into lower rates on the entire loan portfolio. Rates can fall only on incremental loans. Many banks fixed their BPLR at a time when the cost of funds was high. Thereafter, as incremental costs fell, banks kept the BPLR unchanged and passed on the benefit to incremental borrowers through sub-BPLR rates. The present situation, where 70% of loans are below BPLR, is the logical height of this process.

Banks decided to lend below BPLR because they were trying to beat the competition in a fiercely competitive environment where money was in plenty and credit off take lethargic. So, instead of parking their large surpluses with Reserve Bank of India (RBI) in reverse repo and earning 3.25%, it was better to lend to a triple-A customer at 7%, even if 7% was way below the BPLR of perhaps 11%.

The Working Group set up on Benchmark Price Lending Rate (BPLR) in its report submitted in October, 2009, has also strongly felt that, "On account of competitive pressures, banks were lending at rates which did not make much commercial sense." So, the Group after having carefully examined the various possible options, the views of various stakeholders from industry associations and the public and international best practices was of the view that the existing benchmark prime lending rate (BPLR) system has fallen short of expectations in terms of enhancing transparency in lending rates charged by banks and there was worth in introducing the new system.

4. BASE RATE: THE MOST OPTIMAL RESOLUTION

The Reserve Bank announced the constitution of the Working Group on BPLR in the Annual Policy Statement of 2009-10 (Chairman: Shri Deepak Mohanty) to review the BPLR system and suggest changes to make credit pricing more transparent.

The Working Group was assigned the following duties:- (i) to review the concept of BPLR and the manner of its computation; (ii) to examine the extent of sub-BPLR lending and the reasons thereof; (iii) to examine the wide deviation in BPLRs of major banks; (iv) to suggest an appropriate loan pricing system for banks based on international best practices; (v) to review the administered lending rates for small loans up to Rs 2 lakh and for exporters; (vi) to suggest suitable benchmarks for floating rate loans in the retail segment; and (vii) consider any other issue relating to lending rates of banks.

This was not the case that working committee straightaway proposed the base rate system in place of BPLR. There were other options as well but nothing was as good as base rate. Let's think what could have been the other alternatives. It is clear that sub-BPLR lending cannot end as long as lending rates are based on historical costs. They need to be forward-looking. Since most of the loans today are for one year or more, the one-year deposit rate is the appropriate choice for an advanced cost.

But would a PLR that is linked to the one-year deposit rate tackle the sub-BPLR problem? Not quite. We have to think about another element in the pricing formula, operating costs which are the average costs. For some products, such as housing loans, the operating costs are much lower than the average. The lending rates for such products would be lower than the PLR and again there would be sub-BPLR lending.

Another option could have been having two BPLRs, one for wholesale and another for retail. The problem with this alternative was within wholesale, there is a big difference in operating costs for large corporates and for small enterprises. In retail, a gap separates housing from credit cards. In such a case we could have thought of having a BPLR for each business segment. But, then, we would end up creating a clutter in the name of lucidity.

The Working group concluded, therefore, that we need to move away from the very concept of BPLR. It opted for a reference rate called the base rate, which could serve as the basis for loan pricing. The base rate will set a floor for lending rates. Each bank will have a specific base rate that will be linked to the one-year deposit rate and banks will not be allowed to lend below the base rate as it represents the bare minimum rate below which it will not be feasible for the banks to lend.

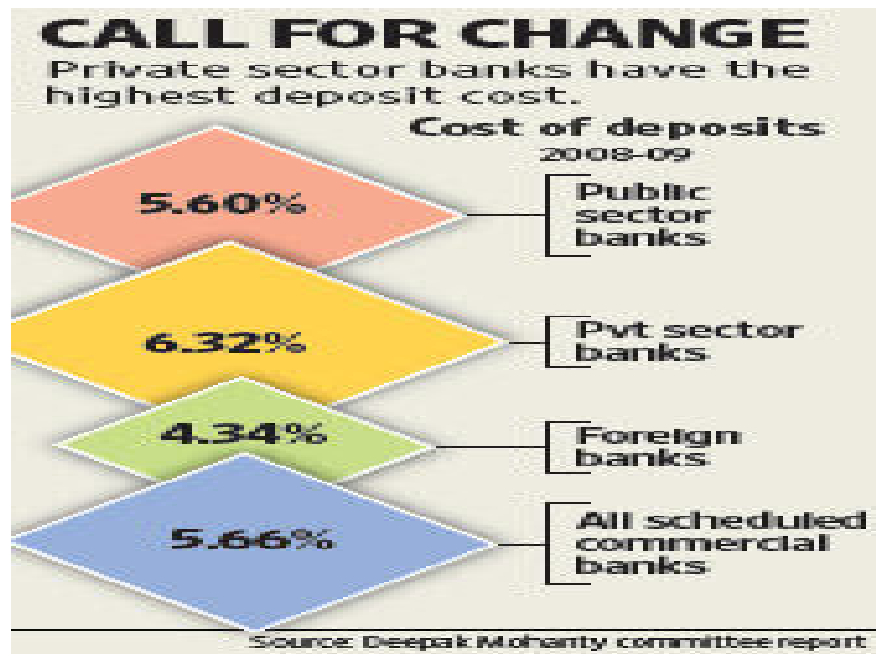
The criteria to be used for determining the base rate would be:

- i) Card interest rate on retail deposits (deposits below Rs 15 lakh) with one year maturity (adjusted for current account and savings account deposits)
- ii) Negative carry on cash reserve ratio/ statutory liquidity ratio; and
- iii) Un-allocable overhead costs for banks.

Banks would also add a profit margin to arrive at the base rate. The actual lending rates charged to borrowers would be the base rate plus borrower-specific charges, which will include product-specific operating costs, credit-risk premium and tenor premium. Under the proposed mechanism, all banks will be required to declare a base rate and charge interest rates over that depending upon the credit profile of the borrower and repayment period. The Base Rate system recommended by the Group will be applicable for loans with maturity of one year and above (including all working capital loans). Banks may give loans below one year at fixed or floating rates without reference to the Base Rate. At present, at least ten categories of loans can be priced without reference to BPLR. The Group recommends that such categories of loans may be linked to the Base Rate except interest rates on (a) loans relating to selective credit control, (b) credit card receivables (c) loans to banks' own employees; and (d) loans under DRI scheme.

Analysts say the base rate for even the best banks would be in the range of 9%. With the cost of deposits at around 6% and adding around 0.75% to compensate for the lower yields on statutory holdings of government bonds and zero yield on cash reserves, an additional 1.25% to unallowable overheads and an average of 1% return on assets, the base rate would add up in this illustrative case to 9%.

The Base Rate could also serve as the reference benchmark rate for floating rate loan products, apart from the other external market benchmark rates. This base rate will be revised every quarter depending on the deposit rate so it will overcome the problem of downward stickiness in rates.



4.1 PROBLEMS OF LENDING BELOW THE BASE RATE

Lending below BPLR was big problems in front of working group so they were suppose to answer the question whether there is any provision or possibility for lending below Base Rate as well. The RBI working group, however, recognizes certain situations when lending below the base rate may be demanded by market conditions. The committee is of the view that the need for such lending may arise as an exception only for very short-term periods. However, in order to ensure that sub-Base Rate lending does not proliferate, the Group recommends that such sub-Base Rate lending in both the priority and non-priority sectors in any financial year should not exceed 15 per cent of the incremental lending during the financial year. Of this, non-priority sector sub-Base Rate lending should not exceed 5 per cent. That is, the overall sub-Base Rate lending during a financial year should not exceed 15 per cent of their incremental lending, and banks will be free to extend entire sub-Base Rate lending of up to 15 per cent to the priority sector. Only short-term loans of up to one year and working capital loans to companies can be given below the base rate.

4.2 MORE TRANSPARENCY WITH BASE RATE

No doubt the base rate will bring in more transparency in the operations of the banking system. Although banks will add their operational costs to the base rate to decide on the actual lending rate but it will now be in the interest of banks to keep costs low because now banks will not be able to lend below base rate and prime lenders would like to borrow only from those banks that offer the rate closest to the base rate. This will help promote greater competition and efficiency across the banking system. Moreover it will be difficult for any single bank to charge rates that are much higher than others.

Information on the base rate will need to be put up on the Web sites and at the branches, and banks also need to disclose the maximum and minimum rates for the major categories of borrowers.

Banks may also add different risk weightages to different categories of borrowers. Again it will be a move to a very transparent system where lenders will be accountable to explain the rates they are charging borrowers and borrowers will have full information about banks' lending rates for different categories.

4.3 PROBLEM WITH BASE RATE AS BENCHMARK RATE

The key problem in the base rate system is the calculation of the base rate as base rate is the bare minimum cost of deposits i.e. average cost. But what matters banks the most is the marginal cost of funds. In some cases, banks charge interest rates based on the rates at which they can raise money for the same tenor as the loan, and if the base rate has to be on a historical cost basis, these kinds of loans will no longer be possible.

There is also no clarity about the tenor for which the base rate applies and bankers say that since RBI has said the base rate will be the minimum rate and borrowers will be charged a tenor premium, which implies the base rate should be for the shortest possible maturity. In fact, some banks now lend at rates linked to the overnight Mibor, or Mumbai interbank offered rate. These kinds of loans would also not be possible as they will have to be priced at some absurd average of deposit rates of all maturities.

This problem could have been solved if this base rate would have been linked to market rate of interest but in India the term money market has not been developed so far because of requirement of CRR and SLR by RBI. So given the set of situation this was the best possible option to allow the banks to price their own products any way they see fit while the needs of regulation would best be served by prudential norms.

4.4 SMALL SCALE ENTERPRISES: THE REAL GAINERS

Why banks have inclined to keep the BPLR at artificially high rates so far? To get more profit from big corporate is one aspect but it is also due to the reason that all small loans (up to Rs 2 lakh) and export loans are limited at the BPLR and if the BPLR is amending downwards, it means that the smaller loans need to be repriced, too, something that banks are unwilling to do. Small scale borrowers were the real victims of the BPLR regime as small borrowers today end up borrowing at very high rates from intermediaries; some microfinance institutions, for instance, reportedly earn a return of over 20% on their investments. In order to increase the flow of credit to small borrowers, the current condition of BPLR as the ceiling for loans up to Rs 2 lakh stands withdrawn. It is expected that the deregulation of lending rates will increase credit flow to small borrowers at reasonable rates as the new base rates are likely to be lower than BPLRs. After considering the costs incurred while sanctioning a loan, the proposed base rate could be as low as 6-7 per cent in the current interest rate scenario while at present, bank BPLRs range between 11 per cent and 16 per cent. Banks should be free to lend to small borrowers at fixed or floating rates, which would include the Base Rate and sector-specific operating cost, credit risk premium and tenor premium as in the case of other borrowers. It is argued that as non-bank credit is invariably costlier; making small loans affordable for banks will raise the supply of such credit and thus be beneficial on the balance to small borrowers. Currently more than half of bank loans are sub-PLR and a huge chunk of loans goes to the big corporates. But after base rate system the big corporates will not be able to dictate terms to the banks as banks cannot rate below the base rate. So the banks will have surplus funds with them, it can also be used for the development and growth of small industries. Simply

put, borrowers in the small and medium enterprise category will no longer bear the burden of higher interest rates so that corporates can enjoy sub-prime lending rates.

Apart from this the working group has suggested that interest rate on rupee export credit should not exceed the Base Rate of individual banks. As export credit is of short-term in nature and exporters are generally wholesale borrowers, there is need to incentivize export credit for exporters to be globally competitive. By this change exporters can still access rupee export credit at lower rates as the Base Rate is expected to be significantly lower than the BPLRs. The proposed system will also be more flexible and competitive.

In view of the critical role played by education loans in developing human resource skills, the interest rate on these loans may continue be administered. But as Base rate would be lower than currently prevailing BPLR, the Group recommends that the interest rates on all education loans may not exceed the average Base Rate of five largest banks plus 200 basis points. Even with this provision, the actual lending rates for education loans would be lower than the current rates prevailing. The information on the average Base Rate should be disseminated by IBA(Indian Banks' Association) on a quarterly basis to enable banks to price their education loan portfolio.

5. CONCLUSION

There is no hesitation in saying that proposed base rate system is better than BPLR. Highly rated corporate have been taking advantages of the excess of liquidity and resorting to short-term loans instead of taking working capital loans in order to bring down their borrowing cost. But now with the new base rate system these ultra low cost borrowings of corporate will become the things of past as banks will completely stop fresh lending below the new benchmark rate- Base rate from April, 2010. As far as banks are concerned they are happy about the decision as from the margin point of view, there will be no change for banks because earlier they were charging more (above BPLR) from small scale and individual borrowers and low (Sub BPLR) from corporate but now with the proposed base rate the loans that were above PLR will get better rates while those that were sub-PLR will see rates going up. But this proposed system will not be successful unless banks are able to assess correctly the appropriate risk that a customer attracts and are serious about charging them for it. After all, even in the earlier system, banks were free to bill clients whatever spread they felt was correct based on the credit risk perception of the customer. Moreover RBI is hoping that the base rate will always move in line with any changes that it might effect in the repo rate. It might not be possible as interest rates will depend on the demand and supply of money in the system.

It can be summed by saying that BPLR is a completely outdated aspect of the Indian banking system and against the broader canvas of banking sector reform; it is a low-hanging fruit that should be grabbed immediately.

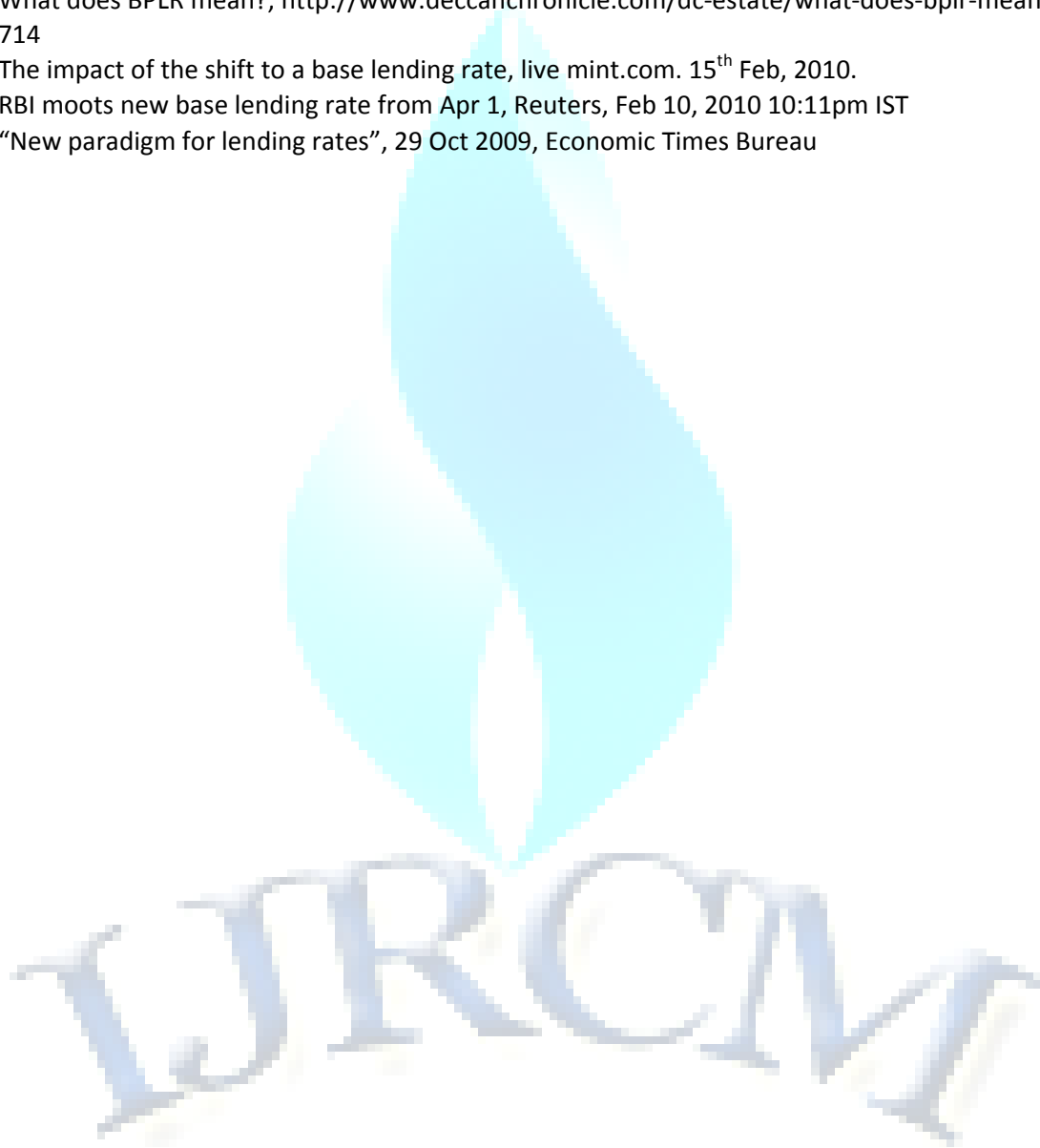
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A STUDY OF FACTORS AFFECTING TRAINING DECISIONS OF EMPLOYEES IN SERVICE INDUSTRY: A STUDY WITH REFERENCE TO SELECTED SERVICE INDUSTRY IN NCR

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ABSTRACT

The role of service industry in development of economy is imperative. With the rapid expansion in this field followed by LPG the sector demands talented workforce to sustain development .Thus the role effective training in retaining the intellectual and knowledge capital in its different sub-sectors is worth noting. Since there is severe dearth of trained manpower in varied sub sectors and seeing the cut-throat competition the role of suitable trainers and utilizing training as a tool for effective retention seems to be a safe pill.

The purpose of this study is to focus on factors affecting training decision in service industry with reference to selected organization like few selected banks, insurance and educational institutions in Faridabad. It attempts to cover areas covered under training for different levels, most preferred method for training, preference of trainees for type of training and also areas suggested by trainees for bringing improvement in training program Also an effort is made to understand role of trainer and other factors that affect good learning.

On the basis of data collected chi square test was applied to determine the association between different factors thus drawing conclusion. The results revealed that the type of training objectives, resulting implications ,off the job methods ,method which focuses on inculcating multi-skills are more preferred by employees .Also certain areas like involvement of trainees, 2-way feedback, suitable selection of training method were focused. The present result will help in improving training as a learning function in service industry.

KEY WORDS

Training methods, training implication, training and learning, service industry.

INTRODUCTION

The rate at which service industry is growing is tremendous .it accounts for almost 50% of our GDP and according to sources in the next 5 years it would cover almost 60% of contribution to growth of our country. Since 1990's it has grown at the rate of 9%

In different sectors this growth is tremendous whether retailing , tourism , insurance , IT and ITES, BPO'S, hospitality , media , education , health care etc .All these sources have tremendous scope for growth and can generate innumerable opportunities for growth and development of country.

Thus, the type of workforce required in these developing sectors huge demand of skilled and trained work force which can convert plans to actions bringing a holistic development for all The role of training and development thus becomes imperative to shape the future trained workforce with the help of suitable training and development methods .Since there is a imbalance between the skills demanded

by the industry and the skills provided by different institutions through which these young graduates pass, the need of providing need based and corporate helpful training is compulsory.

The term training refers to planned activities matched with suitable techniques and material to impart required skills, competencies and develop such attitude and behavior that assists in quick achievement of goals with maximum efficiency and effectiveness.

Training is amongst the most important component that decides the future of any organization. With the increased focus on better nurturing of Human capital and managing this intellectual capital of any organization training plays central role. It helps in carving workforce in such a way so that both organization and individual success is achieved.

LITERATURE REVIEW

Andrews (1999) stated the training is a systematic modification of behavior through learning, which occurs as a result of education, instruction, development and planned experience. Training needs exists when there is a gap between the present performance of employee or group of employees and the desired performance.

Reid et.al. (1993) stated that training is necessary within the organization because it helps in gaining maximum performance from its employees at all levels. It can also be explained in terms of "To develop human potential to assist organizations and individuals to achieve their objectives". For managers to start a training programs, certain conditions are laid, which is normally seeing the climate of the work environment, management.

It is now almost axiomatic that strategic goal of almost all commercial organization is to create more intelligent and flexible firms than their competitors by hiring and developing more talented human resource and by extending their skill base. It is imperative in the context of new business realities that organization should be able to continuously innovate, be customer focused and remain cost competitive to survive, grow and excel in long run. During the 1980 Japanese management practices clearly indicated that business success is based on high standards of performance which in turn depends on highly trained and developed work force (Brown and Read 1984).

Recent researches also indicate a casual link between high commitment practices (including training and development) and improvements in establishment's performance and competitive advantage. Organization learning in small business organization (Harry Matlay, 2000)

Similar approach regarding advantage of training to employees all over the service industry is suggested by TV Rao (2009) suggesting the emerging role of training in enhancing performance. Several factors like training environment, trainer, outcomes of training play a significant role in training, but what is of utmost importance is that whether the organization is going to be benefited by it or not..

Christina Williams (2006) focused on role of training in improving service quality. It is seen that high performance team could be better prepared under planned training. Service quality training decision are highly affected by training resources, implications and role of other department in securing betterment from training.

Waight, C. L., & Egan, T. M. (2005). Also focused on role of evaluation of training as an important aspect that needs to be focused while designing and delivering a training program. It was generally observed

that each training program to be effective demands creativity on part of trainers. The trainee’s performance is deeply affected by creativity used in imparting training and difference which it would make in performance or behavior of trainees .Thus, while designing training program equal focus needs to be given to all aspects of training.

Angle, H. L. (1989) also emphasized on role of innovation in effective training. It is proven by several studies that the more innovative the training methods are the high level of learning happens. The trainees are highly affected by how innovative the trainer as been to train, this creates interest in minds of trainees to acquire maximum out of training.

Edwin Thwaites (2003) in the need for focusing on international and comparative dimensions of corporate training and development policies have been increasingly felt since different nations of world have liberalized and globalize their economies like Latin America. China, India, East and Central Europe etc. The various aspects of training and development sector are as follows:-

Table -1
Different aspects of training and development

Parameter	Indictor
Percentage of payroll spent in training	1.2%
Training money pent per employee	253.3%
Average training hours per employee	4.7
Percentage of employees trained per year	55.3%
HRD or training employee per 1000 employees	2.3

Source – Black well publishing Ltd., 2003, corporate training and development

The key responsibility of training and development is of the following department as sown in table -2

Table -2
Key responsibility training

Position	Percentage
Personnel /HR/Training specialist	71%
Line manager/Supervisor /Foreman	11%

Source – Black well publishing Ltd., 2003, corporate training and development

Table -3 The driving forces for training and development

Table -3

Driving force	Percentage
Pressure to increase quality , innovation and creativity	79%%
Need to enhance efficiency and effectiveness of employee	65%
Need to change corporate culture	62%
To achieve better ROI	54%
To achieve better IR	27
To fulfill needs , wishes and demands of employees	30%

Source - Black well publishing Ltd. ,2003, corporate training and development

Regarding banking sector across the globe there had been many studies show the significance of training and development function in these organizations. Over the years banks all over the world have continuously increased their training, budgets and expense In US average expenditure on education and training was around \$720 per employee in 2003 which was spent on salaries for training staff, tuition reimbursements and payments to outside vendor and other expenses .On an average training budget increased by 7% from 2002 to 2003) (Angela Hills, 2002)

Also there are different studies that proof that there is a big attrition rate due to lack of training and suitable skill development and that suitable training process is not suitable. Attrition rate is around 30-35% highest in any industry .The expenditure incurred by BPO on training is 1-2 % of the total revenues pf this organization .According to Business world report around 60,000 people have changes their job incurring a huge amount around 300 crore .to the industry.

OBJECTIVES OF STUDY

- 1) To determine training objective or purpose of providing training and its relation with training decision
- 2) To determine major attributes or features which affect training decision of employees
- 3) To identify most preferred topic of training by trainees.
- 4) To identify most preferred method for training by employees
- 5) To identify areas suggested by trainees for improvement in training program

NEED OF STUDY

The present study focuses on training in service industry. The basic problem undertaken in this study is to investigate the impact of various training factors that are considered important in training and its impact on trainee's decision to attend training program. .Since in service industry especially at middle level employees, training is mandatory for this level since there are other employees working under them, thus not only technical but other behavioral, managerial and imbibing good leadership skills is a must So, the training decision of trainees to attend and learn from the trainees depends on how far

factors that attract trainees to attend training program are been designed so that in true terms learning resulting from training can be made.

RESEARCH DESIGN

In this study service industry in Faridabad was selected on random basis .Around 6 service industry were selected (including bank, insurance and educational institutions) in which around 270 questionnaire were distributed at middle level employees(in school at lecturer level) .Total 215 questionnaire were received making the response rate 79.62 Amongst the received questionnaire about 65 were incomplete leaving the number of filled questionnaire to 150..Thus, all interpretations were made for150 questionnaire. Structured questionnaire method was used to collect response of employees. Initially an exploratory pilot testing was conducted on 50 middle level employees in selected units of service industry to identify factors which could be used in structured questionnaire 1-5 in final questionnaire.

Q.1 deals with most important objective of imparting training by organization and decision regarding attending training and also to determine if there is any association between objective of training and attending the training. Q.2 deals with selected attributes or features that affect training decision of employees. Q.3 deals with preferred training areas of employees.Q.4 deals with training methods most preferred by employees and which make them to attend training program Q.5 deals with areas which trainees feel needs improvement in training program.

Also in this association between areas that need improvement and attending training program is been found by chi-square method to calculate response on a 3-point interval scale The rest question were based on nominal scale .Thus questionnaire was used as a tool for data collection and final descriptive research. The response for research was collected through restricted stratified sampling. In order to validate the authenticity of factors selected in first and fifth question chi-square test was run.

ANALYSIS AND INTERPRETATION

In the first question 6 factors were identified in exploratory pilot testing to identify the impact of training objective on training decision of employees .These factors were –

- 1) To improve knowledge level of employees
- 2) To enhance work performance
- 3) To increase retention rate
- 4) For preparing trained work force for future
- 5) To improve learning environment
- 6) To build a positive brand image

Ho = There is no significant relation between the objectives of training and the training decision

H1 = There is significant relation between training objectives and training decision of trainees

Now to determine whether these factors are significantly related with training decision of employees or not, a chi-square test was run. The chi-square test value was 118.365 at 0.05 level of significance and 10 degree of freedom, the critical value was 18.307 which is lesser than the tabulated value thus rejecting the null hypothesis. Thus, it can be concluded that there is significant relationship between objectives of training and training decision of employees. (Table -3)

Table -1
Observed frequencies

Factors	L	M	H	Total
A	20	50	70	140
B	10	45	84	139
C	20	40	60	120
D	10	62	30	102
E	90	40	20	150
F	10	46	28	84
	160	283	292	735

Table-2
Expected frequencies

Factors	L	M	H	Total
A	30.47	53.90	55.61	140
B	30.25	53.51	55.22	139
C	26.12	46.20	47.67	120
D	22.20	39.27	40.52	102
E	32.65	57.75	59.59	150
F	18.28	32.34	33.37	84
	160	283	292	735

Table – 3
Cross classification of reasons to attend training program

Level of significance	0.05
No. of rows	6
No. of columns	3
Degree of freedom	10

Test Results

Chi-square test statistics	118.365
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Critical value	18.307
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REJECTS THE NULL HYPOTHESIS

In the second question which is based on nominal scale trainees were asked that which attribute or feature of the training program attracts those most to take decision to attend the training. For this based on the response of employees in terms of % analysis (Percentage analysis) the areas preferred were analyzed. The responses given on the basis of different attributes chosen were (Table -4). Also preference is shown in form of bar chart (Figure -1) –

Table-4
Response of trainees on essential attribute of training

Factor	Total no. of respondents	% of response	Rank
Relevance	39	26%	III
Practical implications	63	42%	I
Easy to learn	40	26.66%	II
Helps in improving performance	8	5.33%	IV

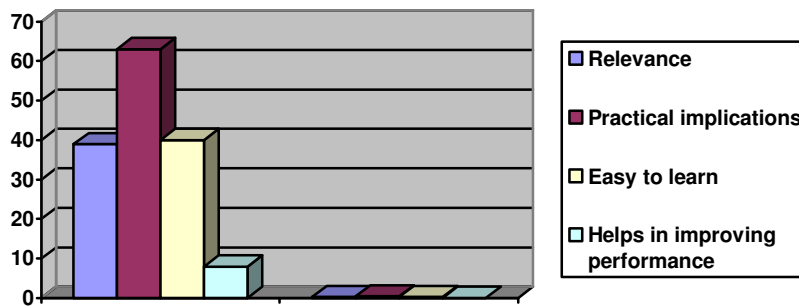


Figure 1 Preference of attribute of training

In the third question, it was attempted to find out area or topic which affects training decision of trainees for attending program .Based on response collected composite ratio was determined with the help of standard deviation to find the ranking of factors as per trainee’s choice. The area or topic chosen were:

- 1) Technical skills
- 2) Conceptual skills
- 3) Behavioral skills
- 4) Communication skills
- 5) Personality Development
- 6) Team building

Formula used for estimating composite ratio-

$$\text{Composite ratio} = M / \sigma$$

Where , $M = \Sigma FX / N$

The following table explains the calculated composite ratio and resulting ranks of the different factors (areas or topics) preferred in training (table-5) -

Table-5
Preferred areas of training

Factors	Weighted average	Std. deviation	Composite ratio	Rank
Technical skills	4.013	1.1830	3.392	I
Conceptual skills	2.7	1.79	1.50	VI
Behavioral skills	3.533	1.49	2.371	III
Communication skills	3.05	1.526	1.99	V
Personality development	3.766	1.11	3.192	II
Team building	3.13	1.53	2.045	IV

Thus from the table and the rank calculated it can be estimated that technical skills are most preferred areas whether for banks, insurance or educational institutes since it is required for better performance every trainee wants to excel in this most preferred area.

Surprisingly, followed by this next preferred area is personality development which indicates that apart from craving to conceptual skills, as an emerging trend trainee's focus and understand the role of personality in better management. Thus it can be a good input for trainers to include such content that focus on developing personality of middle level managers so that effective management can be done.

Followed by this is preference of behavioral skills , which shows that trainees understand the role of behavior in getting work done by individuals .Thus if such training is provided to trainees where behavioral improvement is taught the learning would result in better relation , less conflicts and sound industrial relations.

The next preference was for team building skills which is a positive indication that team working is amongst employees preference ,thus if training on such team boosting and team working is promoted it will result in better team management , higher performance and better results .

Followed by team building was communication skills, it is due to the fact that due to lack of proper communication channels either in form of unclear instructions, untimely directions and delayed dissemination of information and differences in opinion may happen Thus, training in such topics that may help in building 2-way communication which will help in providing better role and goal clarity and also in better customer retention.

The last preferred factor was conceptual skills, it indicates that trainees are attracted by such learning that have practical implications and that can help in improving their work performance instead of imbibing theories which have no practical values.

The fourth question attempted to find the most preferred method for training by the trainees. For this based on composite ratio and standard deviation ranks were determined to assess preference of trainees. The preferred training methods included were –

- 1) On –the job training
- 2) Off-The job training
- 3) Mixed method

After calculating M (weighted average) and standard deviation composite ratio was calculated by the formula –

$$M = \text{Std. deviation} / \text{Total sample size}$$

Further composite ratio was calculated with the help of $C.R = M / \text{Std deviation}$

Thus, based on this composite ratio ranking on the basis of trainees preference is calculated as shown in table – 6

Table -6
Preferred training method

Factor	Weighted mean	Std. deviation	Composite ratio	Rank
On-the Job	3.886	0.853	4.532	III
Off-the Job	3.36	0.38	8.84	I
Combined	4.11	0.468	8.78	II

Thus, it is seen that the trainees prefer off-the job methods much more than on –the job methods, also preference for off-the job methods are equally higher, but surprisingly on-the job methods are preferred less. This may be because of the reason that on the job methods like classroom lectures or job instruction training are quite monotonous .It does not involves trainees resulting into loss of interest and lack of interest thus resulting into less learning . On the other hand off the job methods provide exposure as well as break the monotony of same trainer, work environment and work pressure. Thus, it is an important finding with relevance to designing effective training methods by inculcating off-the job methods along with on-the job methods to sustain trainees interest, creativity and learning in a continuous way.

Apart from this employees were asked to respond on most preferred method among on the job and off-the –job training .Percentage analysis was done to find the most preferred method amongst different method as shown in Table- also preference of on-the job training is shown in figure -2

Table -5
Preference for on-the –job training

Training method	No. of respondents	%
Vestibule	18	12
Instructor led training	42	28

Job instruction technique	34	22.6
Lecture method	16	10
Job rotation	40	26.66

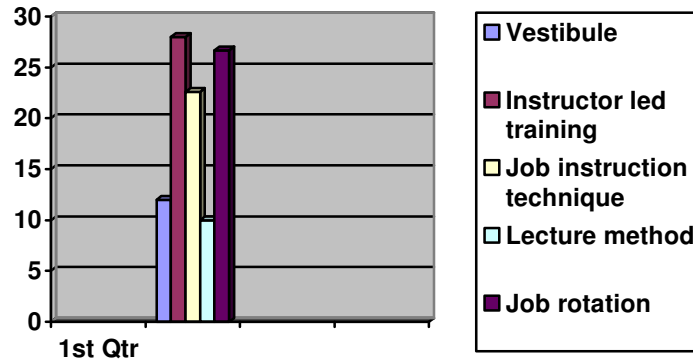


Figure 2- - Preference of on-the job training methods

It is clear from above that lecture method is amongst the least preferred method due to monotonous mode and non-involvement of trainee’s .Amongst the most preferred method is. instructor led training followed by job rotation since in the first there is a feeling of support and clarity when training is under supervisor .Followed by this is job rotation which helps in giving a broader perspective to learning and developing understanding in different other areas thus making the workforce in form of trainees more efficient Also as suggested by trainees that vestibule method is also preferred but if done under an expert can give far fruitful results.

Amongst the preference of off-the –job training methods the following results were obtained (table-7) followed by preference in bar chart (figure -3)–

Table-7
Preference for off-the –job training

Factors	No. of respondents	%
Business games	39	26
Role plays	42	28
Simulations	28	18.61
Conferences	29	19.33
Case study	12	8

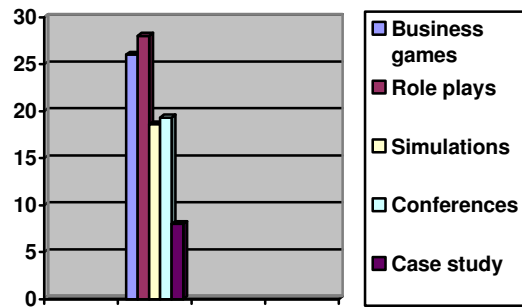


Figure 3- Preference for off-the job training method

It is clear from above that among the off-the-job methods role plays are most preferred as a training method of training, since by this better coordination, empathy and understanding towards each other role can be developed. It helps at different managerial across and within departments to understand each other problem, strength, limitation and thus learn in a real sense. Followed by this are business games which help in providing multitudinal skills in employees to make them better skilled and competent and strengthen different skills like decision making, problem solving, better forecasting and leading. Further conferences and simulation are also preferred by trainees since they provide new information and also a better understanding towards new concepts can be developed.

The fifth objective was aimed to find areas of improvement in the training program as suggested by trainees to make training a better learning experience In connection with this certain areas that were identified in which improvements were suggested were as follows –

- 1) Involvement of trainees in training need assessment
- 2) Providing feedback during and after training
- 3) Improvement in training methods
- 4) Selection of trainer
- 5) Correlating training content directly with work
- 6) Introduction of e-learning
- 7) Designing suitable training environment
- 8) Duration of training

ON THE BASIS OF THIS FOLLOWING HYPOTHESIS WAS FORMULATED –

H0 – There is no significant association between factors identified and scope for improvement in training program.

H1- There is significant association between factors identified and scope for improvement in training program.

To determine the significant relation between these factors chi-square test was run .as is clear from table-10 the calculated value of chi-square is 50.175at 0.05 level of significance and 14 degree of freedom .the critical value is 23.685 .since the critical value is lesser than the tabulated value the null hypothesis is rejected .Thus, it can be said that there is a significant relation between the factors identified and scope for improvement in training program .

**Table-8
Observed frequencies**

Factors	L	M	H	Total
Involvement of trainees in training need assessment	30	40	60	130
Providing feedback during and after training	10	32	70	112
Improvement in training methods	25	40	50	115
Selection of trainer	10	60	30	100
Correlating training content directly with work	20	40	50	110
Introduction of e-learning	10	46	28	84
Designing suitable training environment	25	40	55	120
Duration of training	30	40	50	120
	160	338	393	891

Table-9
Expected frequencies

Factors	L	M	H	Total
Involvement of trainees in training need assessment	22.34	49.31	57.39	130
Providing feedback during and after training	20.11	42.48	49.40	112
Improvement in training methods	20.65	43.625	50.72	115
Selection of trainer	17.95	37.93	44.10	100
Correlating training content directly with work	19.75	41.72	48.51	110
Introduction of e-learning	15.08	31.86	37.08	84

Designing suitable training environment	21.54	45.52	52.92	120
Duration of training	21.54	45.52	52.92	120
				891

Table -10

Cross classification of areas of scope for improvement and test results

Level of significance	0.05
No. of rows	8
No. of columns	3
Degree of freedom	14

Test Results

Chi-square test statistics	50.175
Critical value	23.685

Since the critical value is less than the tabulated value **null hypothesis is rejected**

Also in order to determine the priority of trainees in terms of area of improvement percentage analysis followed by ranking was used to find the preference of trainees (Table-11)

Table -11

Factor	No. of respondent	% preference	Preference rank
Involvement of trainees in training need assessment	41	27.34	I
Providing feedback during and after training	26	17.34	II
Improvement in training methods	17	11.34	V
Selection of trainer	12	8	V
Correlating training content directly with work	25	16.67	III
Introduction of e-learning	18	12	IV
Designing suitable training environment	6	4	VI

Duration of training program	5	3.34	VII
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It is clear from the above that amongst the highly preferred area involvement of trainees in assessing training need to make training need based and providing feedback throughout training program to keep track with their learning consistently should be practiced.

CONCLUSION

Thus from above factors following conclusions can be made –

- 1) It is clear that there is a significant relationship between the objectives of training and training decision of employees. Thus, while designing the training content or defining the purpose of training, focus should be on needs of trainees thus making the program more useful with wide implications
- 2) Since from the response of the trainees it is clear that their decision regarding attending training program depends largely on practical implication of the learning from training so that improved work performance can be brought. Thus for trainer it is important to consider this factor along with ease of understanding and use of appropriate aids in making learning a quick and interesting job
- 3) It is also seen that technical skills are preferred more since the first objective of middle level employees in automobile sector is to have low rejection and high productivity. Thus they all focus on such training programs that can enhance their technical skills. Also as an emerging perspective trainees prefer to be trained into behavioral and personality development, this they consider important for effective management and maintaining good work environment.
- 4) Off the job training method is more preferred than on the job training, it indicates that trainers should include such methods which can give them feel of a change by way of changing environment, breaking monotony and enjoying the training resulting in better learning. Thus, a combination of methods both of on the job as well as off the job should be designed to impart multi-facet skills to employees
- 5) Training methods which involve a combination of skills and involvement of trainees with support of superior or instructor is preferred, so training programs should be designed in such a fashion so that 2-way communication between trainers and trainees can be better nurtured. Similarly, training which provides multi-skills apart from their basic core job should be promoted.
- 6) The organization should also focus on certain improvement areas like involving trainees in need assessment, providing consistent feedback to trainees, linking training with learning, improvement in selection of trainer, training aids and introduction of e-learning should be introduced

IMPLICATIONS OF STUDY

The study will help in introducing new ideas to make training innovative like involvement of trainees in training need identification, providing feedback, deciding need based and relevant objectives, selecting the trainer objectively, choosing the training aids and method carefully. With introduction of e-learning methods and bringing improvement in identified areas that are essential in making training effective, the resulting learning will ensure improved work performance and trained workforce.

LIMITATIONS OF STUDY

The study had following limitations –

- 1) It included only selected service industry for collecting data and analysis
- 2) Only middle level employees were included in the sample
- 3) Only factors affecting training decision of employees were basically focused in the study. Similarly, other topics which impact training decision of employees can be studied for further research.

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DATA MINING BASED ASSOCIATION RULES & RFM ANALYSIS IN INDIAN RETAIL SECTOR: AN EMPIRICAL INVESTIGATION

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ABSTRACT

Retail in India has emerged as one of the most dynamic and fast paced industries with several players entering the market. The data that retail business collect about their customers is one of the greatest assets of it. Buried within this vast amount of data is all sorts of valuable information that could make a significant difference to the way in which any business organization run their business, and interact with their current and prospective customers and gaining the competitive edge on their competitors.

Data Mining based Association Rules are used in Indian Retail Industry for analyzing the data that describes transactions, lists of items, etc. The association rules are derived from patterns in a large datasets to determine which products are frequently purchased together and help in understanding the buying behaviour. Association results are easy to understand and association rules are easy to use.

Association analysis, commonly referred to as Market Basket Analysis, used by retail industry to group the items into small sets (e.g. Sets of items that are purchased together) and determine the optimal locations to promote the products. It can be applied not only to items purchased concurrently but also to items purchased sequentially. Association rules are frequently used by retail industry to assist in marketing and sales promotion, shelf management/item bundling (identifying items that are bought together by sufficiently many customers by processing the point-of-sale data collected with barcode scanners to find dependencies among items), Inventory management, advertising, discount/promotion decisions, etc. Retailers organized its merchandise based on buying patterns and information about associations between products. One illustrative example has been explained with the help of a data mining tool in the retail sales data (live data).The model with an illustration in this research paper has been discussed. The research in his paper models for incorporating the Data Mining based Association Rules in Indian Retail Industry.

Retail industry is adopting the use of loyalty cards. Rewarding customers who are frequent buyers encourage them to do even more of their shopping at that retail store and make them less likely to buy from the competitor. RFM analysis uses three metrics viz. Recency, Frequency and monetary to evaluate the customer behaviour and customer value. The author has done the RFM analysis on the live customer's historical large dataset of a retail store. The paper demonstrates the RFM analysis with empirical evidence.

KEYWORDS

Association Rules, RFM, Data Mining; DM, Customers, Retail sector.

1. INTRODUCTION

In the recent years the significant changes are done in the retail industry which has important implications on DM. Retail industry is using information technology (IT) for generating, storing and analyzing mass produced data not only for operational purposes but also for enabling strategic decision making to survive in a competitive and dynamic environment. DM helps in reducing information overload along with the improved decision-making by searching for relationships and patterns from the huge dataset collected by organizations. It enables a retail industry to focus on the most important information in the database and allows retailers to make more knowledgeable decisions by predicting future trends and behaviours.

The extraction of association rules from large databases has proven beneficial for companies since such rules can be very effective in revealing actionable knowledge that leads to strategic decisions. With competition for shelf space intensifying, there is a pressing need to provide shoppers with a highly differentiated value proposition through 'right product mix in right time amount at right time' (Bala, 2008). Mining or extracting association rules from structured and unstructured data collected from customer transaction database will be tremendous importance for taking strategic decisions in retail industry. Since an organization have thousands of items, only few of them deserve management's closest attention. Knowledge of purchase pattern will be an important input for developing association rules. Association rule correlates one set of items with another set of items. Association rules generated are derived from the patterns in a particular dataset. The discovery of such association rule can help retailers to develop marketing strategies by gaining insight into, which items are frequently purchased together by customer. Data mining is used to find new, hidden or unexpected patterns from large volume of historical data, typically stored in a data warehouse (Bala, 2008). Knowledge discovered using data mining helps in more effective strategic decision making.

The arrival of retail boom caused the global technology vendors to quickly get into the marketplace with solutions that claim to make retailers' lives simpler. Retailers have to put in great efforts to really know their customers. Retail industry emphasized on quick delivery of customer focused services (offers, promos, etc) since adapting to customer needs in a very limited period of time is also very important. Retailers continuously get the advantage from information collected from customers' transactions. Hence requirements of retail, technology wise would encompass business intelligence, data mining/warehousing, and other similar technologies since using these, retailers can constantly benefit from newly observed trends based on user purchases (Sohoni, 2007). The changing consumption patterns trigger changes in shopping styles of consumers and also the factors that drive people into stores (Kaur and Singh, 2007). Hou and Tu (2008) addressed that the managers in the contemporary marketing must importantly identify potential customer relationships to positively affect corporate performance. Ranjan and Bhatnagar (2008) opinioned that the optimization of revenue can be accomplished by a

better understanding of customers, based on their purchasing patterns and demographics, and better information empowerment at all customers touch points, whether with employees or other media interfaces. With the retail boom, companies are likely to deploy IT tools that help them enhance the end-customer's experience. Jones and Ranchhod (2007) expressed that the strategic focus is required on the real complexity of the relationship that organizations are initially able to establish with customers. Sangle and Verma (2008) opined that the customer relationship management unites the potential of marketing strategies and IT to create profitable, long-term relationships with customers and helps in enhancing the opportunities to use data and information to both understand customers and co-create value with them.

2. LITERATURE REVIEW

Dennis (2001) explored the customer knowledge management framework for shopping centers using Data mining. Terrovitis and Vassiliadis (2003) present the architecture of a pattern base management system that can be used to efficiently store, and query patterns. Van der Aalst (2003) introduces the concept of workflow mining and presents a common format for work flow logs. van der Aalst (2003) introduce the concept of workflow mining and present a common format for work flow logs. List and Machaczek (2004) illustrates how a data warehouse can be used to facilitate a Corporate Performance Measurement System by the integration of business process performance information into a traditional data warehouse that generally represents only the functional organization. Pan (2005) find out the state of IT adoption and factors that affect IT adoption in Chinese retail companies. Wong et al. (2005) developed a method to select inventory items from association rules which gives a methodology to choose a subset of items which can give maximal profit with the consideration of cross- selling effect. Marketos and Theodoridis(2006) proposed a framework for measuring the performance in the retail industry. Tvrdikova(2007) discussed the issues of business intelligence applications to support decision making. Bala(2008) models for incorporating purchase dependencies in retail multi-item inventory management. Bhanu and Balasubramanie (2008) explored the predictive modeling of inter-transaction association rules from a business perspective. Srivastava(2008) build a picture of the changes in retail taking place in India. Cross-selling is the strategy of pushing new products to current customers based on their past purchases.

3. RESEARCH METHODOLOGY

The customer transaction data is very valuable asset for any company hence the need for research design was felt. So, the data for this paper was collected in two phase. First the primary data is collected through various sources which include personal interviews, surveys and filled questionnaire, review the available online software packages, attending conferences and seminars, etc. Secondary data is collected through studying the literature related to research that is available in various journals, books, magazine, websites, established doctoral thesis, etc. The authors got the customer transaction database of one retail firm (name masked) which is analyzed with the help of data mining tool Statistica and SPSS' Clementine. The basic objective is to study the advantages of association rules using DM in Indian retail industry with the help of an empirical study.

4. INDIAN RETAIL INDUSTRY

The increased globalization, market saturation, and increased competitiveness give rise to mergers and acquisitions. Indian retailers are seeking competitive advantages by better improving relationships with

customers which has taken on new life. Rogers (2005) addressed that the companies recognize that customer relationships are the underlying tool for building customer value, and they are finally realizing that growing customer value is the key to increasing enterprise value.

The retail sector is growing rapidly in the Indian scenario as well as globally. With the Indian retail sector booming, it brings immense opportunities for foreign as well as domestic players. The changing lifestyle of the Indian consumer makes it essential for the retailers to understand the patterns of consumption. The changing consumption patterns trigger changes in the shopping styles of consumers and also in the factors that drive people into stores (Kaur and Singh, 2007). The Indian retail has been transformed due to the attitudinal shift of the Indian consumer in terms of choice preference, value for money and the emergence of organized retail formats. Rising incomes, increased advertising, and a jump in the number of women working in the country's urban centers have made goods more attainable and enticing to a larger portion of the population. At the same time, trade liberalization and more sophisticated manufacturing techniques create goods that are less expensive and higher quality (Hanna, 2004). Pande and Collins (2007) explored to centralize the retail supply chain in India with the goal to improve overall retail business in India.

Vector (2007) explored that the Retail is India's largest industry with the market size of around US \$312 billion in which organized retailing comprises only 2.8 per cent of the total retailing market and is estimated at around US\$ 8.7 billion. The organized retail sector is expected to grow to US \$ 70 billion by 2010. FICCI Retail Report (2007) reported that the estimates predict that the overall size of the retail sector in India is expected to touch US\$427 billion by 2010 and US\$637 billion by 2015 with the modern segment expected to account for 22 per cent by 2010, up from the present four per cent.

5. DATA MINING

Data Mining is a process of analyzing the data from different perspectives and presenting it in a summarized way into useful information. It extracts patterns and trends that are hidden among the data. It is often viewed as a process of extracting valid, previously unknown, non-trivial and useful information from large databases (Rao, 2003). Han and Kamber (2007) expressed that the DM is extracting or mining knowledge from large amount of data. Feelders et al. (2000) opined that the DM is the process of extracting information from large data sets through the use of algorithms and techniques drawn from the field of statistics, machine learning and database management systems. Noonan (2000) explained that DM is a process for sifting through lots of data to find information useful for decision making. It helps in predicting the future of the business. It can make the improvement in every industry throughout the world. The data can be mined and the results can be used to determine not only what the customers wants, but to also predict what they will do. West (2005) addressed that by relying on the power of data mining, retailers can maintain the consistency and accuracy of their underwriting decisions; they can significantly reduce the impact of fraudulent claims; and can have a better understanding of their customer's wants and needs. It can be used to control costs as well as contribute to revenue increases (Two Crows Corporation, 2005).

The DM software uses the business data as raw material using a predefined algorithm to search through the vast quantities of raw data, and group the data according to the desired criteria that can be useful for the future target marketing (Ahmed, 2004). DM involves the use of predictive modeling, forecasting and descriptive modeling techniques. By using these techniques, a retail firm can proactively manage customer retention, identify cross-sell and up-sell opportunities, profile and segment customers, set optimal pricing policies, and objectively measure and rank which suppliers are best suited for their needs (Bhasin, 2006). DM applications automate the process of searching the huge amount of data to find patterns that are good predictors of purchasing behaviors. After mining the data, marketers

must feed the results into campaign management software that manages the campaign directed at the defined market segments (Thearling, 2007).

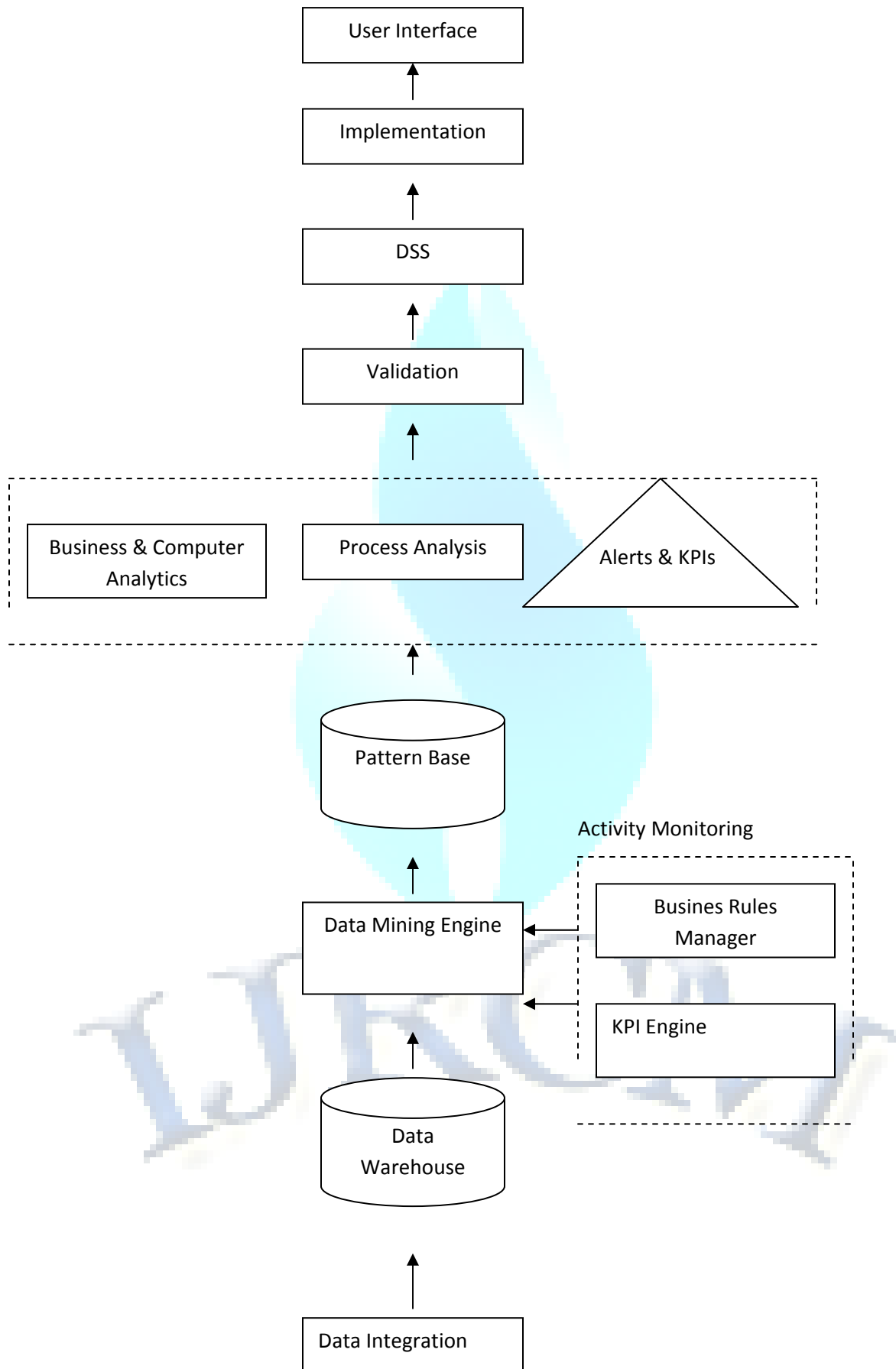
Wang and Wang (2007) pointed out that the DM techniques for the online customer segmentation helps in clustering the customers on the basis of the characteristic that they show while purchasing the product online or surfing the net. Chen, Wu and Chen (2005) effectively discovered the current spending pattern of customers and trends of behavioral change by using DM tools, which would allow management to detect in a large database potential change of customer preference, and provide products and services faster as desired by the customers to expand the client base and prevent customer attrition. Pan et al. (2007) found that the problem of classification of the customer is cost sensitive in nature. Consumer-focused companies with sizable caches of information on current and potential customers such as retailers are ideal for data mining technology (Cowley, 2005).

Chen and Liu (2005) focused on enhancing the functionality of current applications of DM. Berry and Linoff (2001) expressed that only through the application of DM techniques can a large enterprise hope to turn the myriad records in its customer databases into some sort of coherent picture of its customers. It can also be used to locate individual customers with specific interests or determine the interests of a specific group of customers (Guzman, 2002). Berman and Evans (2008) opined that DM is used by retail executives and other employees-and sometimes channel partners to analyze information by customer type, product category, and so forth in order to determine opportunities for tailored marketing efforts that would lead to better retailer performance.

6. MODEL DEVELOPMENT

The model proposed has been depicted in the following figure1 for measuring and managing the performance in the retail sector. The source data module containing customer database, transactional database and other databases can be used as the input to the system for mining association rules (patterns).The model can integrate data from heterogeneous sources and data warehouse can be formed. Activity monitoring module is concerned with the real time information. It controls and updates KPIs and verifies that corporate rules are satisfied by triggering Business Rules Manager. KPIs can also be verified for satisfying predefined Business Rules. Violation of business rules can trigger alerts in the enterprise portal. Data mining engine have a set of techniques and algorithms for identifying patterns on the data warehouse. Sequence of purchase, routes of purchase, identifying churners and non-churners, correlations between products, prediction of the product demand, customer segmentation, identifying the switching behaviour of the customers are few of the tasks that can be applied on the shopping transactional data. Patterns are extracted from the heterogeneous data sources by applying the data mining techniques contained in the data mining engine. Frequent item sets, association rules extracted from warehouse data are typical example of patterns. Enterprise portal containing the business and customer analytics, Process analytics and alerts and KPIs is the proposed output which is validated and then used in Decision Support System (DSS). Data mining facilitated by data warehousing, addresses the need of strategic decision making. Knowledge discovered from data mining can be used in DSS and can be used by the users in various positions after implementation.

One live example in the following section has been illustrated where association rules have been mined using a data mining tool named Statistica Data Miner. The proposed model is as follows:



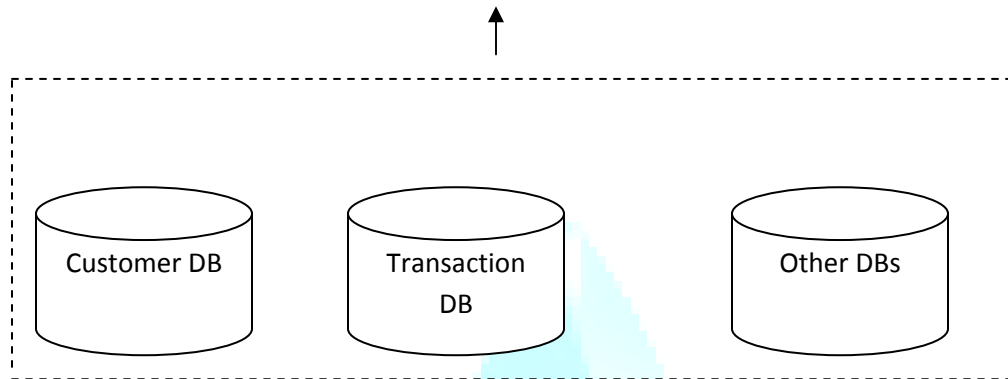


Figure1: Proposed Model

7. EMPIRICAL INVESTIGATION USING DATA MINING

The data collected from the retail firm (name masked) is analyzed with the help of a data mining tool.

7.1 Association Rules: Empirical investigation

The analysis was performed on the live large dataset of customer transactions of a retail outlet using a data mining tool Statistica Data Miner.

Association rules are generated of the general form *if Body then Head*, where *Body* and *Head* stand for single codes or text values (items) or conjunctions of codes or text values. The major statistics computed for the association rules are *Support* (relative frequency of the *Body* or *Head* of the rule), *Confidence* (conditional probability of the *Head* given the *Body* of the rule), and *Correlation* (support for *Body* and *Head*, divided by the square root of the product of the support for the *Body* and the support for the *Head*). These statistics can be summarized in a spreadsheet, as shown below:

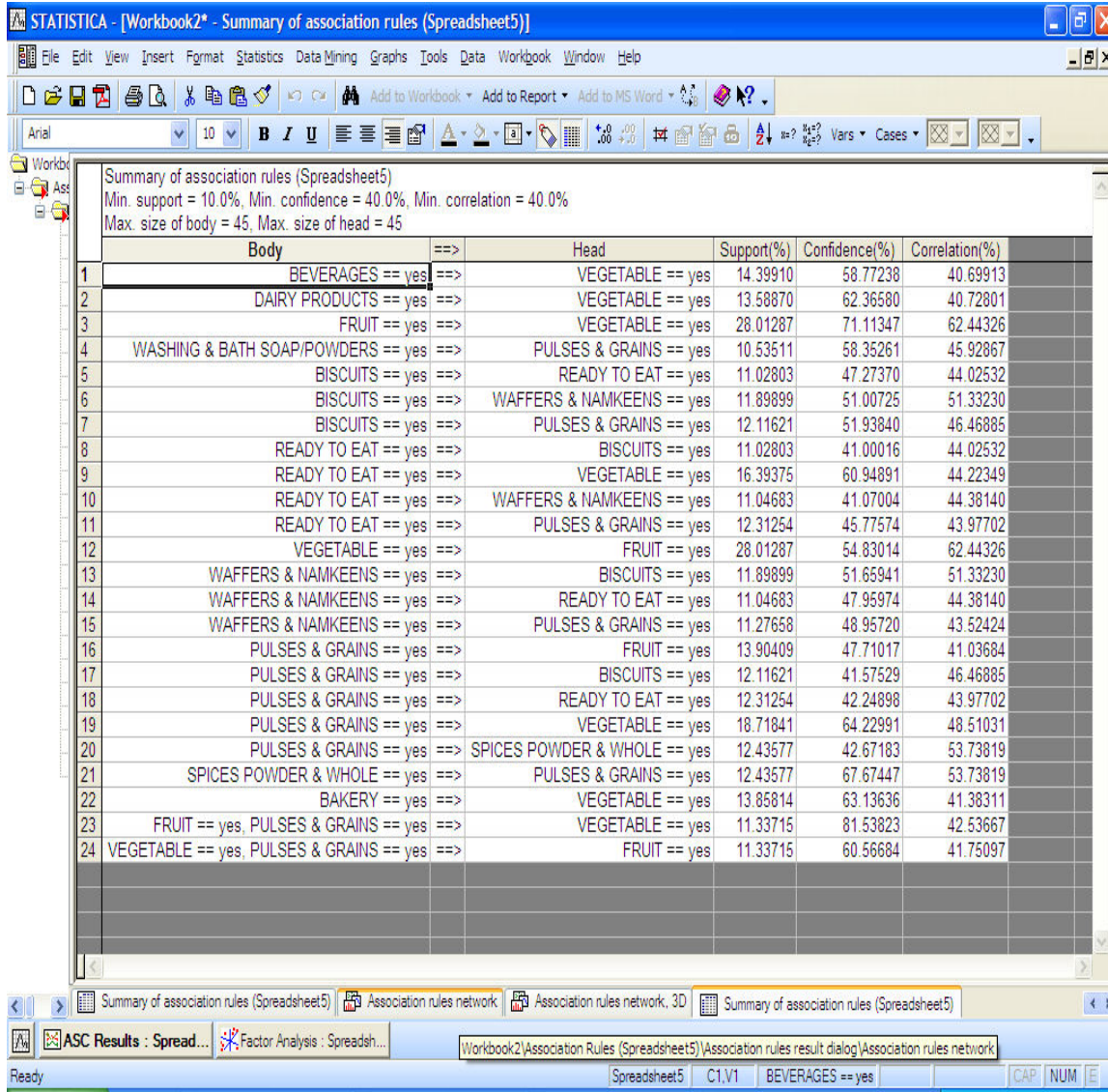


Figure2: Tabular Representation of Association Rules

This results spreadsheet shows an example of how association rules can be applied to mining tasks. The values for support, confidence, and correlation are expressed in percent.

From the above spreadsheet, the association rule *If (Fruit=yes AND Pulses & Grains=yes) then vegetable=yes* have the maximum confidence and the rule *If Fruit=yes then vegetable=yes* have the maximum support value and correlation value.

Though above rules is a very common combination, few unexpected rules are also extracted with a good confidence value, some of them are as follows:

If Bakery=yes then vegetables=yes,

If Dairy Products=yes then vegetables=yes,

If ready to eat=yes then vegetables=yes,

If Beverages=yes then vegetables=yes

These rules can be reviewed in the graphical format depicted as follows:

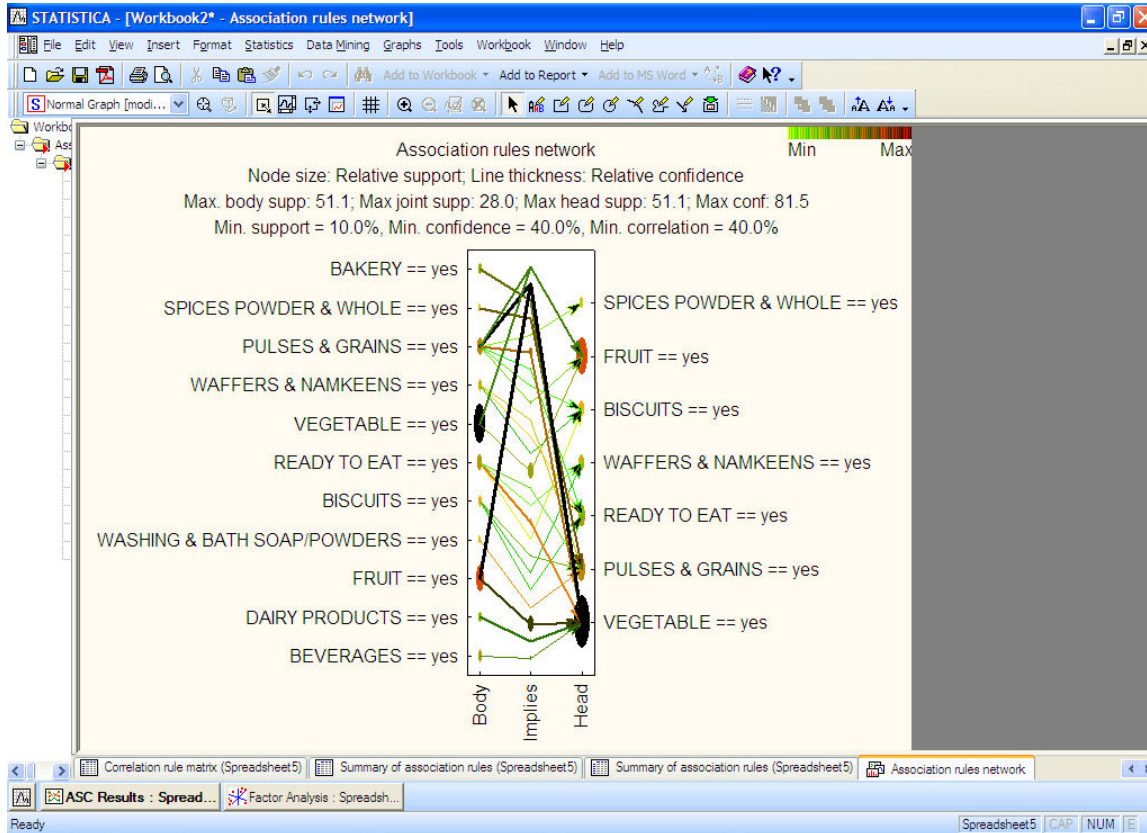


Figure3: Association Rules Network, 2D

In this graph, the support values for the *Body* and *Head* portions of each association rule are indicated by the sizes and colours of each. The thickness of each line indicates the confidence value (conditional probability of Head given Body) for the respective association rule; the sizes and colours of the circles in the centre, above the *Implies* label, indicate the joint support (for the co-occurrences) of the respective *Body* and *Head* components of the respective association rules.

Hence, in this graphical summary, the strongest support value was found for vegetable=yes which was associated with FRUITS=yes, BEVERAGES=yes, DAIRY PRODUCTS=yes, PULSES AND GRAINS=yes. The absolute frequencies with which individual codes or text values (items) occur in the data are often not reflected in the association rules; instead, only those codes or text values (items) are retained that show sufficient values for support, confidence, and correlation, i.e., that co-occur with other codes or text values (items) with sufficient relative(co-)frequency

If we increase the minimum correlation value from 40% to 50%, we get the clearer picture as shown below:

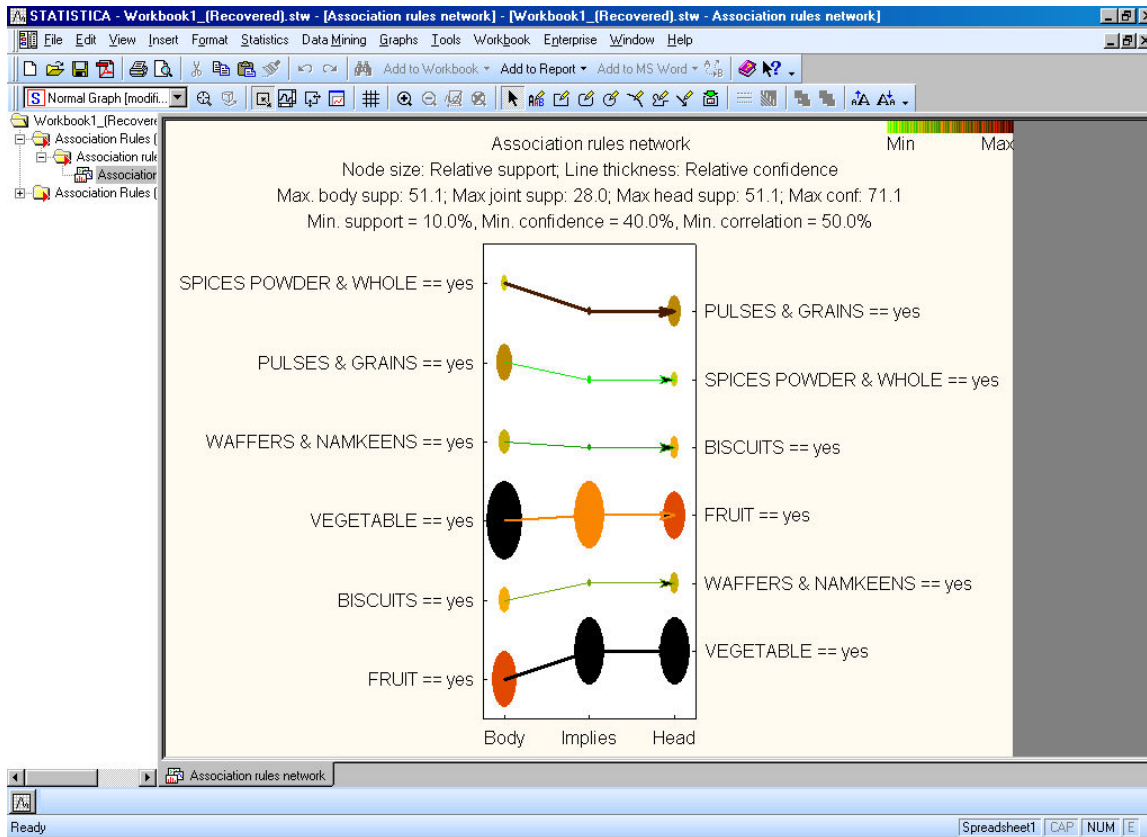


Figure4: Association rules Network

. The association rules derived can be graphically summarized in 3D association network display as well as shown below.



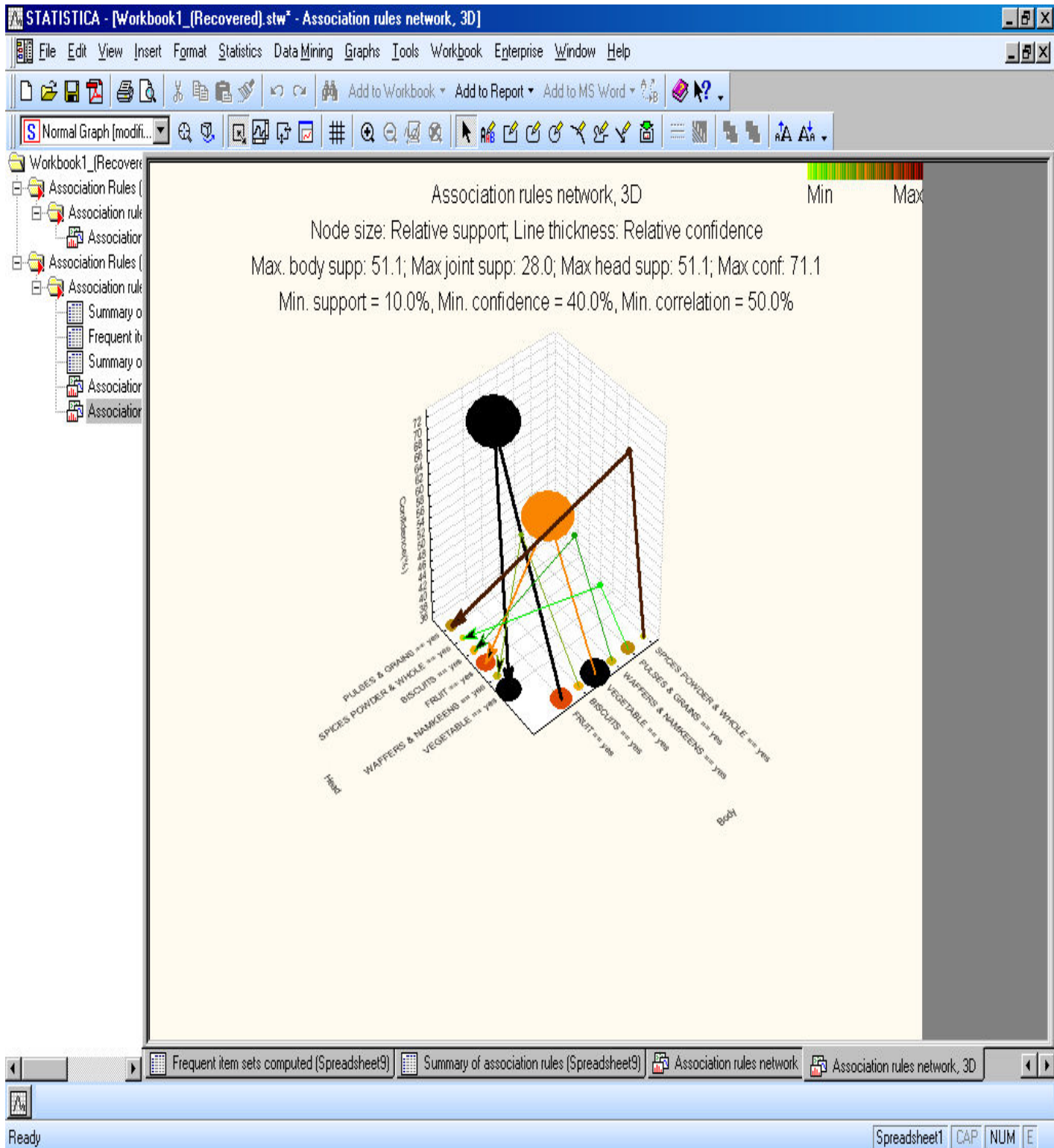


Figure5: Association Rules Network, 3D

As in the 2D Association Network, the support values for the *Body* and *Head* portions of each association rule are indicated by the sizes and colors of each circle in the 2D. The thickness of each line indicates the confidence value (joint probability) for the respective association rule; the sizes and colors of the "floating" circles plotted against the (vertical) z-axis indicate the joint support (for the co-occurrences) of the respective *Body* and *Head* components of the association rules. The plot position of each circle along the vertical z - axis indicates the respective confidence value. Hence, this particular graphical summary clearly shows two simple rules: Customer who purchases vegetables also purchases fruits, and vice versa. Customer who purchases pulses and grains also purchases spices powder and whole, and vice versa.

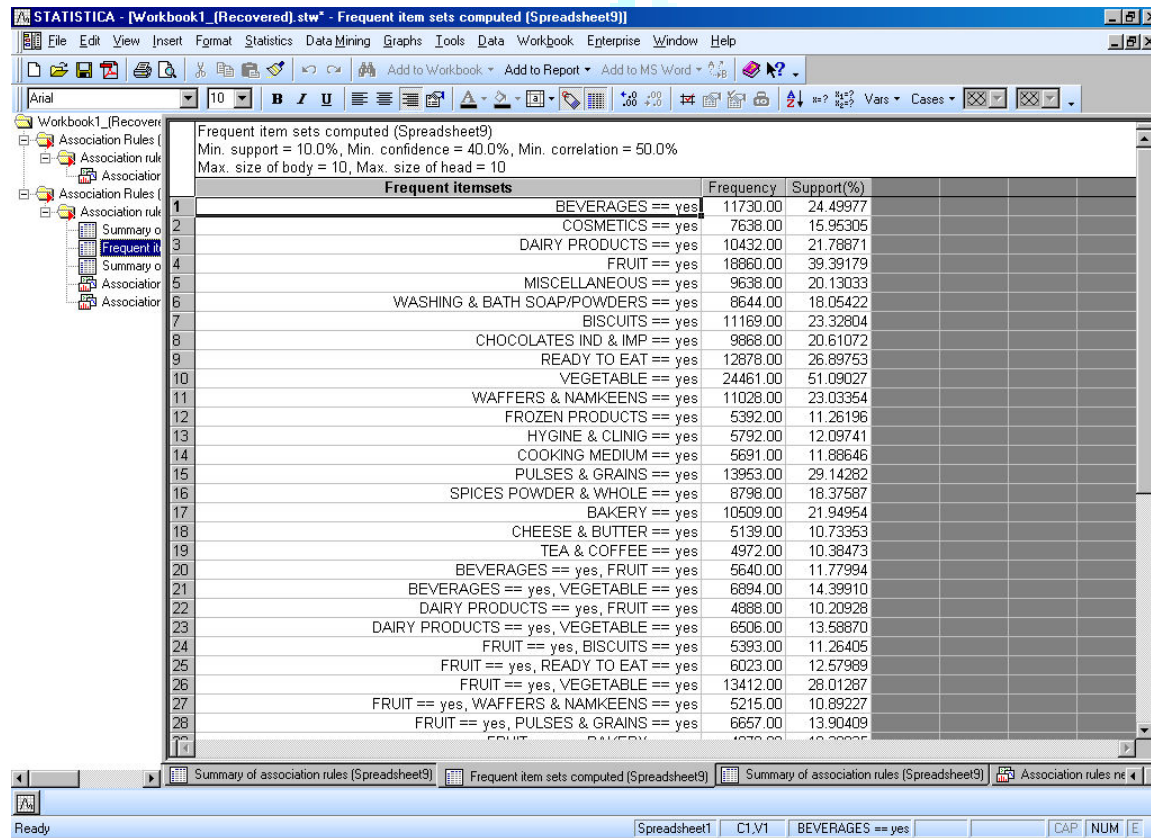


Figure 6: Frequent Item sets

The spreadsheet above demonstrates the frequent item set with the support values. From the table it is clear that vegetables has the maximum frequencies followed by fruits, pulses & grains, biscuits, beverages, etc.

7.2. RFM ANALYSIS

RFM stands for recency, frequency, and monetary value. This technique uses these three metrics to evaluate customer behavior and customer value (Kumar, 2006). *Recency* is a measure of the time lag since the customer has purchased last from your business or how recently a customer has purchased. Recency can be measured in weeks, months, quarters, fiscal years, etc. *Frequency* is the quantity or volume of items or services purchased in a certain defined period. It can be single units or perhaps aggregated in deciles or whatever meaningful grouping. *Monetary value* is a numeric currency figure representing the value of each of the frequency units or aggregated units that were purchased.

Aggelis and Christodoulakis (2005) addressed that the RFM analysis is a method to identify high-response customers in marketing promotions, and to improve overall response rates, Smith (2006) expressed that the analysis of customer data is the key component for the success of CRM.

The RFM analysis is depicted in the following figure:

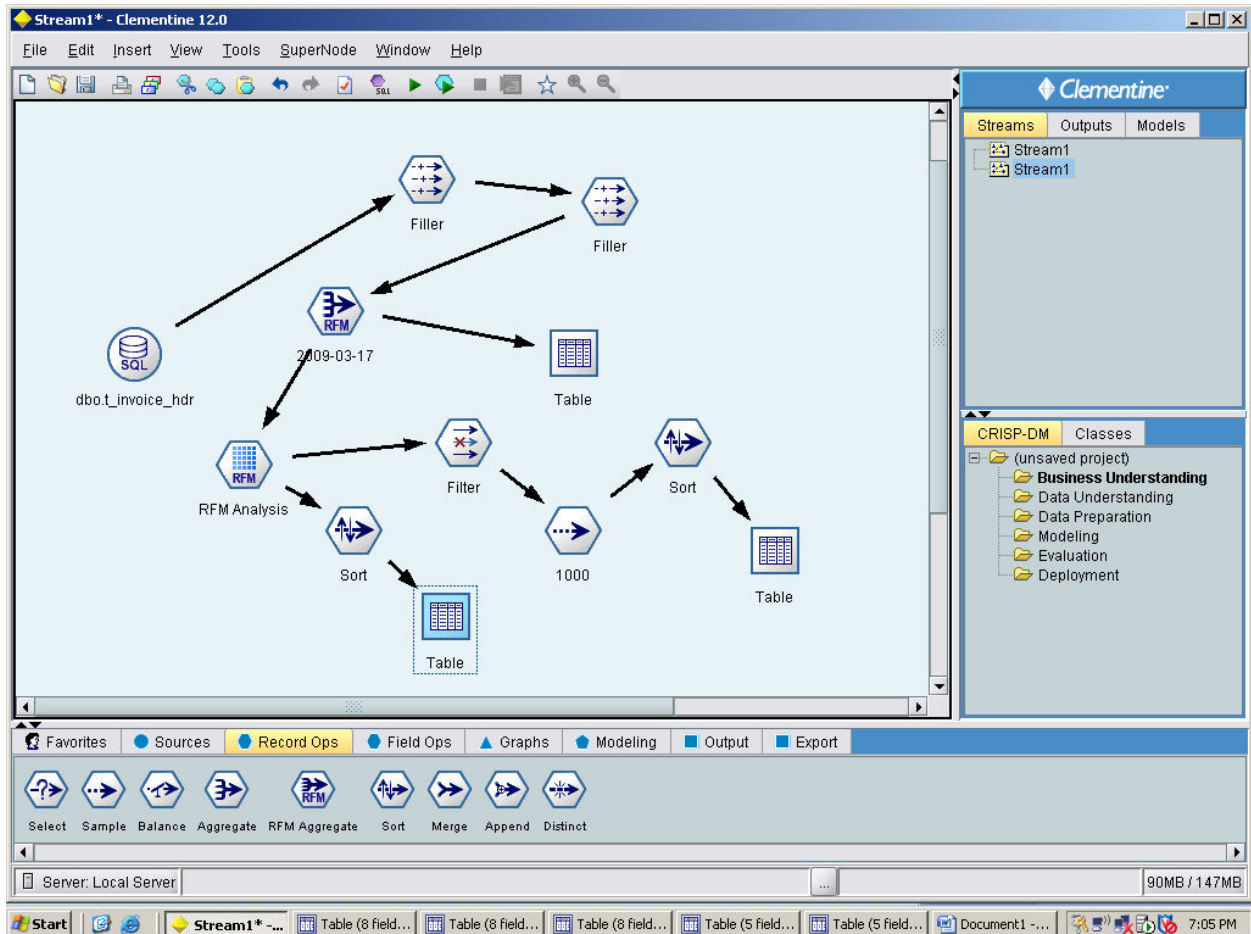


Figure 7: RFM Analysis using SPSS Clementine tool

RFM Aggregate enables to take a customer’s historical transactional data and combine that data into a single row that lists when they last dealt with the retailer, how many transactions they have made and the total monetary value of those transactions. RFM Analysis then enables the retailer to further analyse this prepared data. The results of the RFM Analysis is shown in the following figure:

Table (8 fields, 3,150 records)

	cust_id	Recency	Frequency	Monetary	Recency Score	Frequency Score	Monetary Score	RFM Score
1	3762	30	1	375.000	5	1	1	250.000
2	3788	30	1	237.000	5	1	1	250.000
3	3798	30	2	1386.000	5	1	2	350.000
4	3784	30	2	1037.000	5	1	1	250.000
5	3779	30	2	679.000	5	1	1	250.000
6	3751	31	1	330.000	5	1	1	250.000
7	3722	32	2	255.000	5	1	1	250.000
8	3796	32	1	1993.000	5	1	2	350.000
9	3781	32	3	345.000	5	1	1	250.000
10	3790	34	1	4050.000	1	1	3	410.000
11	1167	34	1	310.000	1	1	1	210.000
12	3659	35	1	750.000	1	1	1	210.000
13	3684	35	1	281.000	1	1	1	210.000
14	3752	30	3	653.000	5	1	1	250.000
15	3764	35	1	330.000	1	1	1	210.000
16	3763	31	3	1263.000	5	1	2	350.000
17	3759	38	2	1068.000	1	1	1	210.000
18	3588	39	2	158.000	1	1	1	210.000
19	3773	39	1	1598.000	1	1	2	310.000
20	3783	39	1	4968.000	1	1	3	410.000
21	3758	30	2	1377.000	5	1	2	350.000
22	3778	35	2	1572.000	1	1	2	310.000
23	3707	41	1	174.000	1	1	1	210.000
24	3765	40	2	616.000	1	1	1	210.000
25	3772	40	2	208.000	1	1	1	210.000
26	3777	42	1	4633.000	1	1	3	410.000
27	3461	42	1	35.000	1	1	1	210.000
28	3613	36	3	4940.000	1	1	3	410.000
29	3589	43	1	1939.000	1	1	2	310.000
30	3769	43	1	6180.000	1	1	3	410.000
31	3709	38	2	1316.000	1	1	2	310.000
32	3757	44	1	9453.000	1	1	3	410.000
33	3664	39	2	1626.000	1	1	2	310.000
34	3743	45	1	138.000	1	1	1	210.000
35	3756	35	3	2471.000	1	1	2	310.000
36	3742	43	2	159.000	1	1	1	210.000
37	3643	38	3	2548.000	1	1	2	310.000
38	3740	47	1	156.000	1	1	1	210.000

Table Annotations

OK

Figure 8 Results

By default, the highest importance when calculating scores is given to the recency data, followed by frequency, and then monetary. If required, it can be amended by changing the weights.

Kumar (2006) explained that the relative weights of R, F, and M are computed using regression techniques and then those weights are used for calculating the combined effects of RFM. The RFM score is calculated as follows:

(Recency score x Recency weight) + (Frequency score x Frequency weight) + (Monetary score x Monetary weight). RFM score can be considered as the weighted sum of the recency, frequency, and monetary value scores for a customer. The RFM score tell the retailer which customers are more profitable to the company. The retailer can identify the promotional target customers with the highest RFM score. RFM analysis is considered significant for the retail industry. A customer who has visited a retailer Recently (R) and Frequently (F) and made a lot of Monetary Value (M) through payment and standing orders is very likely to visit and make payments again. After evaluation of the customer's behaviour using specific RFM criteria the RFM score is correlated to the retailer interest, with a high RFM score being more beneficial to the retailer currently as well as in the future.

Kahan and Kahan (1998) opined that the RFM is a powerful behavioral analysis technique which is easy and cost-effective, providing the customer and transactional information stored in an accessible electronic form which helps the database marketers to effectively use electronically captured information leading to three types of benefits: increased response rates; lowered cost per order; and greater profit.

Ghazanfari et al. (2008) developed a novel country segmentation methodology based on Recency (R), Frequency (F) and Monetary value (M) variables. After the variables are calculated, clustering methods are used to segment countries and compare the results of these methods by three different criteria. Customers are classified into four tiers: Top-active, Medium-active, New customer and Inactive. Then a customer pyramid is drawn and the customer value is calculated. Consequently, the data are used to analyze the relative profitability of each customer cluster and the proper strategy is determined for them. The key component to successful RFM is good record-keeping and tapping into these three measures of customer behavior - recency, frequency, and monetary - will put their increasingly rich insights to work to improve the fundraising results of a firm (BlackBaud, 2004). Kitayama (2002) explained an example of marketing method to establish customer strategies, using data mining technique based on customer profile data.

MANAGERIAL IMPLICATIONS

Managers can develop profiles of customers with certain behaviors, for example, those who purchase designer labels clothing or those who attend sales. This information can be used to focus cost-effective promotions. They can perform basket analysis through they can identify which items customers tend to purchase together. This knowledge can improve stocking, store layout strategies, and promotions. They can do Sales forecasting which helps in examining time-based patterns to make stocking decisions. There are various benefits to managers by implementing our model.

DIRECTIONS FOR FUTURE RESEARCH

The application of the proposed model in other industries could be a task of future work.

SUMMARY AND CONCLUSIONS

Data mining is a tool used to extract important information from existing data and enable better decision-making throughout retail industry. They use data warehousing to combine various data from databases into an acceptable format so that the data can be mined. The data is then analyzed and the information that is captured is used throughout the organization to support decision-making. The retail industry is also realizing that data mining could give them a competitive advantage. The leading corporate in India have recognized that the business world is knowledge-intensive with innovative-or-die approaches. All corporate utilize the technology for storing and managing enterprise related data. Those retailers that have realized the utility of data mining and are in the process of building a data mining environment for their decision-making process will reap immense benefit and derive considerable competitive advantage to withstand competition in future. Data mining is a very powerful tool that should be used with utmost care for increasing customer satisfaction, providing best, safe and useful products at reasonable and economical prices. This should be used for making the business more competitive and profitable. Data mining should be used in any way that affects the privacy of common man, so that the confidentiality and individuality of

human being is preserved. It should not be used in any way that may cause undue hardship, financial loss or emotional setback.

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FACTORS AFFECTING INDIA'S BALANCE OF PAYMENT (BOP) AFTER LIBERALIZATION (1991)

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ABSTRACT

Any national macro economic policy has four broad objectives viz., high level of employment, control of inflation, rapid economic growth and maintenance of equilibrium in the international balance of payments. The last one is specially of importance to developing nations because the trade and payment volumes are comparatively large in relation to domestic economic activity. The management of balance of payment is thus of great importance to the economic progress of a developing nation. Balance of payments is one of the major indicators of a country's status in international trade, with net capital outflow

*The aim of the study is to find out the factors affecting India's BOP since liberalization in 1991. India has made rapid strides in international trade after opening of the economy. Once the factors that directly influence BOP can be identified, we can take necessary and adequate measures to have a balance of payment equilibrium. A **balance of payment equilibrium** is defined as a condition where the sum of debits and credits from the current account and the capital and financial accounts equal to zero.*

Several factors that directly influence India's BOP have been identified and data for the factors has been collected from secondary sources (Indiastat.com). Statistical tools (Multiple Regression, ANOVA and Karl Pearson coefficient of correlation) have been used to analyse the data. During the study it has been assumed that BOP has a linear relationship with the factors (discussed in the study) affecting it.

The study will throw light on the factors that directly or indirectly affect India's BOP. Once the factors have been identified and relationship established, managing BOP will become easier. The study will aid the government to undertake necessary control measures through the monetary and fiscal policy. The study will also reveal how much (quantitatively) the factors are responsible for India BOP.

KEY WORDS

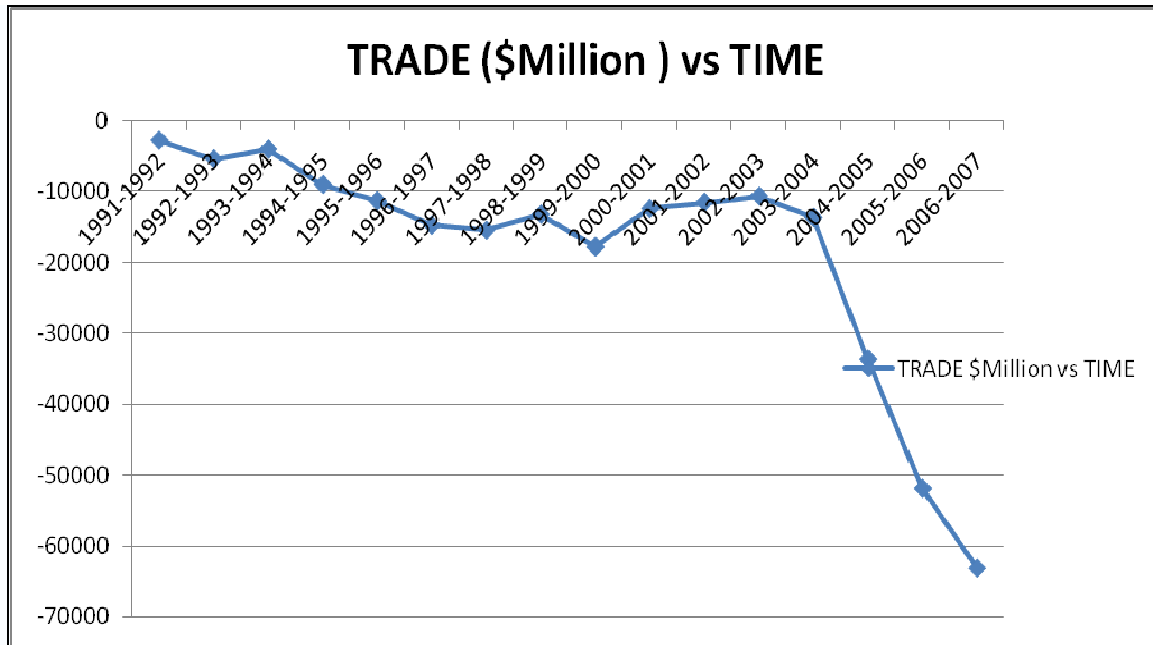
BOP, deficit, export, import, trade.

BALANCE OF PAYMENTS

In economics, the balance of payments, (or BOP) measures the payments that flow between any individual country and all other countries. It is used to summarize all international economic transactions for that country during a specific time period, usually a year. The BOP is determined by the country's exports and imports of goods, services, and financial capital, as well as financial transfers. It reflects all payments and liabilities to foreigners (debits) and all payments and obligations received from foreigners (credits). Balance of payments is one of the major indicators of a country's status in international trade, with net capital outflow. The Balance of Payments for a country is the sum of the current account, the capital account and the financial account.

DETERMINANTS OF INDIA'S BOP

INDIA'S TRADE BALANCE

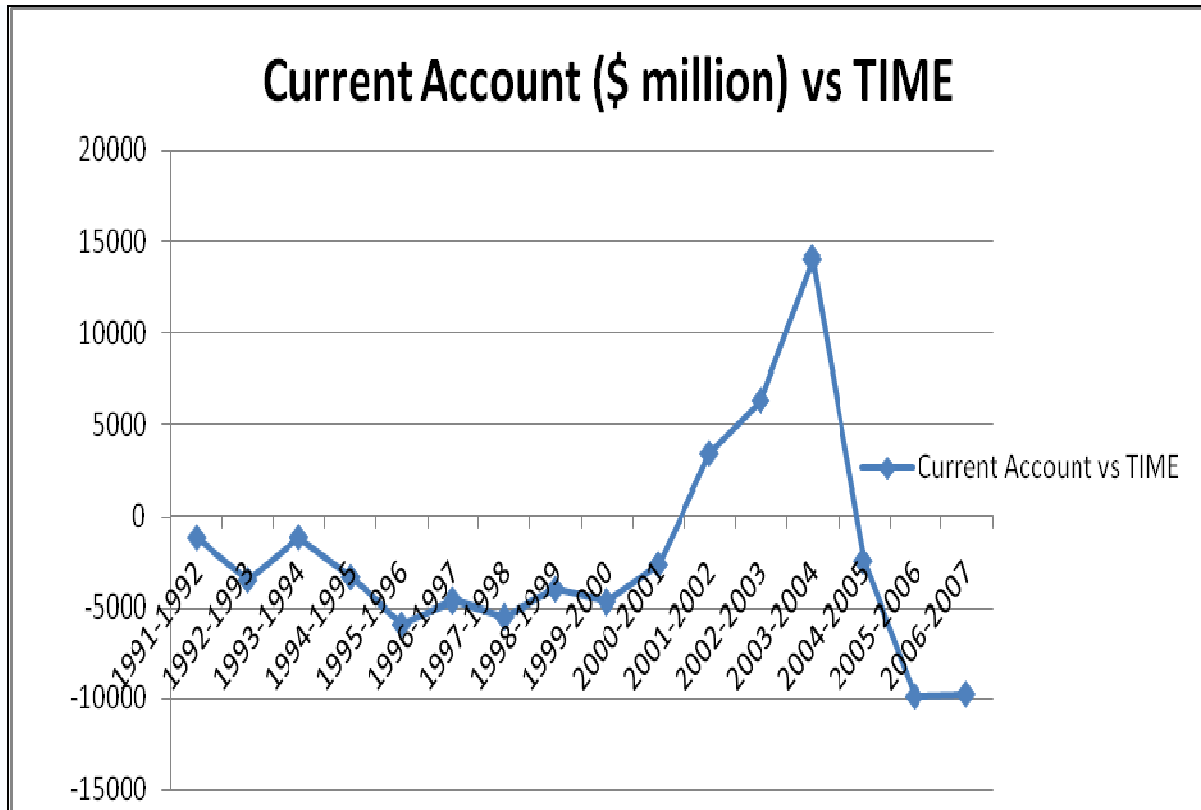


source: Indiastat.com

figure : 1

After liberalization of economy as per suggestions of Rangarajan committee Trade Balance (Export-Import) increased in terms of volume of trade. Both export and import increased exponentially. In 2005 Export reached \$128083 million vs Import of \$191254 Million. Exports increased due to increase in service sector contribution specially software and Import increased because of Oil Imports which has a major contribution of Imports volume. With the onset of structural reforms in 1991-92, accompanied initially by severe import compression measures and determined efforts to encourage repatriation of capital, there was a turnaround in the second half of 1991-92. Over the next two years (1993-95), mainly due to foreign investment flows, robust export growth and better invisible performance, the balance of payments situation turned comfortable and reserves surged by US \$ 14 billion. A combination of prudent and unique policies for stabilisation and structural change ensured that the crisis did not translate into generalised financial instability. In the 1990s, the lessons drawn from managing the crisis led to external sector policies that emphasised the competitiveness of exports of both goods and services, a realistic and market-based exchange rate regime, external debt consolidation and a policy preference for non-debt creating capital flows. These policies ensured that the current account deficit remained around one per cent of gross domestic product (GDP) and was comfortably financed even as the degree of openness of the economy rose significantly relative to the preceding decades and capital flows began to dominate the balance of payments.

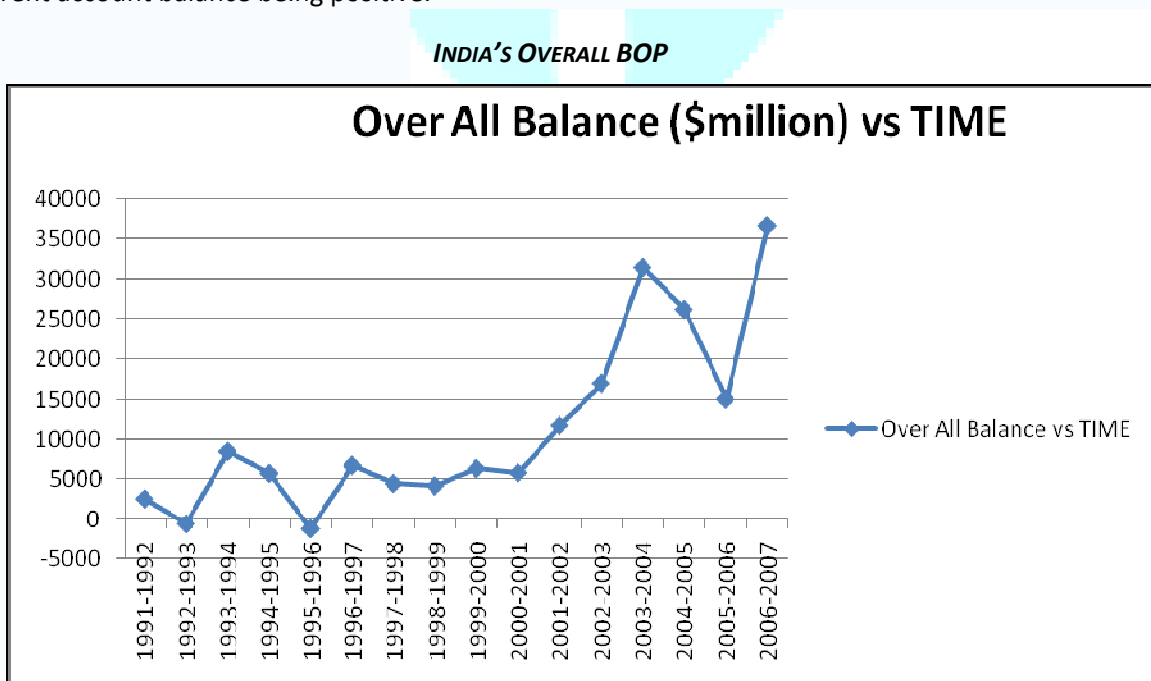
INDIA'S CURRENT ACCOUNT BALANCE



source: Indiatstat.com

figure : 2

Total current account balance (Trade +Invisible) remains constant even though imports were high due to remittance as well as services. But after 2003-2004 the Current account again was negative due to tremendous demand of Oil . In 2004-2005 the Trade Volume was very less which accounts for the Current account balance being positive.



source: *Indiastat.com*

figure : 3

Overall balance (Total Capital Account, Current Account and Errors & Omissions) increased after LERMS. This increase is partially due to foreign investment as well as increase in remittance.

LERMS (Liberalised Exchange Rate Management System)

After the Gulf crisis in 1991, the broad framework for reforms in the external sector was laid out in the report of the high level committee on Balance of Payments, popularly known as Rangarajan Committee, as it was chaired by Dr. C. Rangarajan, former Governor of the Reserve Bank of India and currently Chairman of the Economic Advisory Council to the Prime Minister. After downward adjustment of the exchange rate in July 1991, following the recommendations of this Committee to move towards the market-determined exchange rate, the Liberalised Exchange Rate Management System (LERMS) was adopted in March 1992 involving dual exchange rate system in the interim period. The LERMS was essentially a transitional mechanism and a downward adjustment in the official exchange rate took place in early December 1992 and ultimate convergence of the dual rates was made effective from March 1, 1993, leading to the introduction of a market-determined exchange rate regime. The unification of the exchange rate of the Indian rupee was an important step towards current account convertibility, which was finally achieved in August 1994 by accepting Article VIII of the Articles of Agreement of the IMF. Capital account liberalisation started as a part of wide-ranging reforms beginning in the early 1990s. The Rangarajan Committee recommended

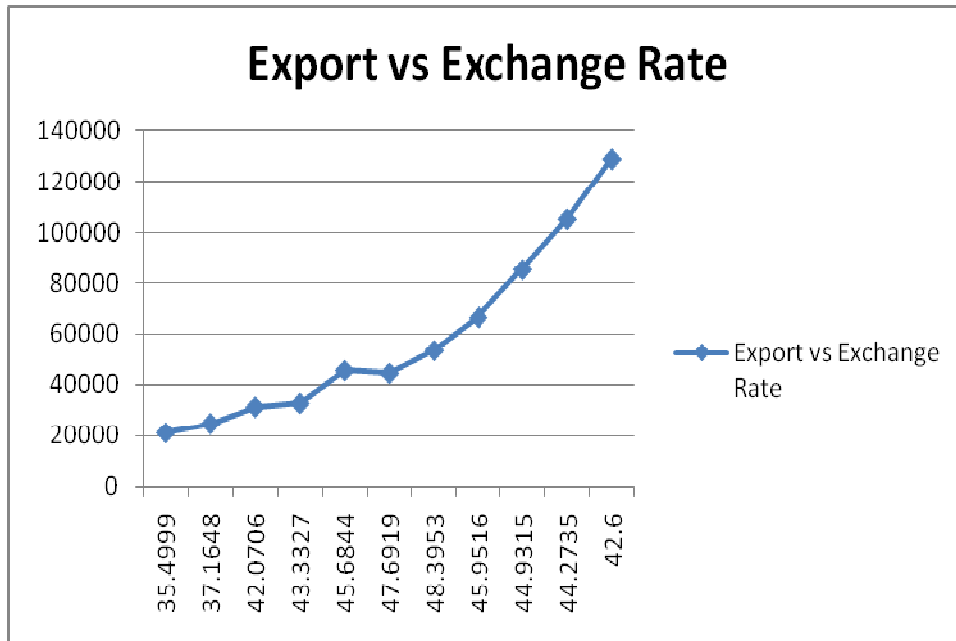
- liberalization of current account transactions leading to current account convertibility need to contain current account deficit within limits
- compositional shift in capital flows away from debt to non-debt creating flows
- strict regulation of external commercial borrowings, especially short-term debt discouraging volatile elements of flows from non-resident Indians
- gradual liberalisation of outflows
- disintermediation of Government in the flow of external assistance.

Finally, it was decided to call it Liberalised Exchange Rate Management System (LERMS). The LERMS was an extremely useful period of learning for the market and authorities alike; it allowed players to respond on a limited scale to price signals. The difference between unofficial market rate and official market rate narrowed considerably. In about a year's time, the country moved from the dual exchange rate regime to a unified market-based exchange rate regime.

DEVALUATION OF RUPEES: "HOOK SKIP AND JUMP"

The Reserve Bank of India (RBI) devalues the rupee in a two-stage operation code-named "Hop-Skip-and-Jump", to restore external confidence in India and enable the government to seek balance of payments (BoP) support from the International Monetary Fund and the World Bank. The 'hop' was to "test waters", both political and economic. Dr Manmohan Singh, however, was convinced it was a now or never jump. He thought that it was much better to leave the rupee under-valued than over-valued, and asked the "man on the spot" to go ahead.

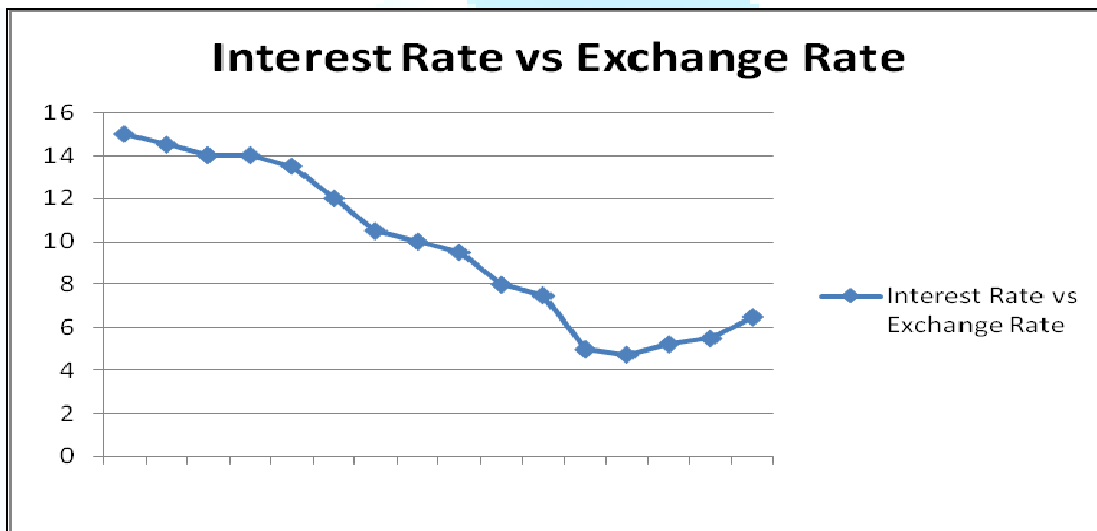
RBI deputy governor C Rangarajan, announced the jump. The devaluation of rupees helped to increased the exports and also the overall balance of payments.



source: Indiatat.com

figure : 4

INTEREST RATE

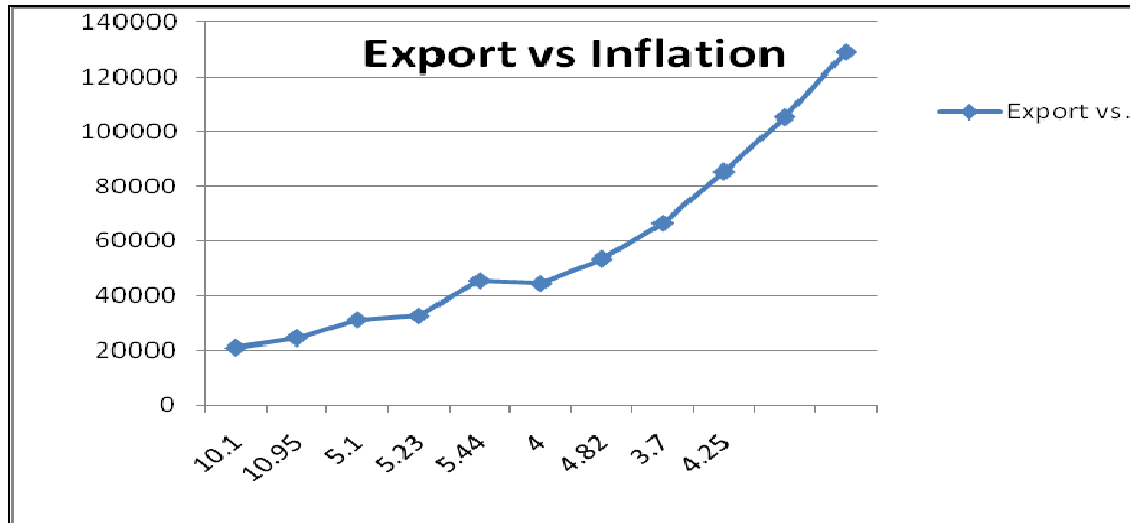


source: Indiatat.com

figure : 5

By Changing the Interest rates i.e. decreasing the interest rates will leave more liquidity with people and also the value of money, which is directly proportional to interest rates, will decrease due to lower demand and more supply of money. It will go on decreasing till the equilibrium is reached. The relation between the Interest rates and Value of money is shown below. The exchange rate is negatively correlated to Interest rate.

INFLATION

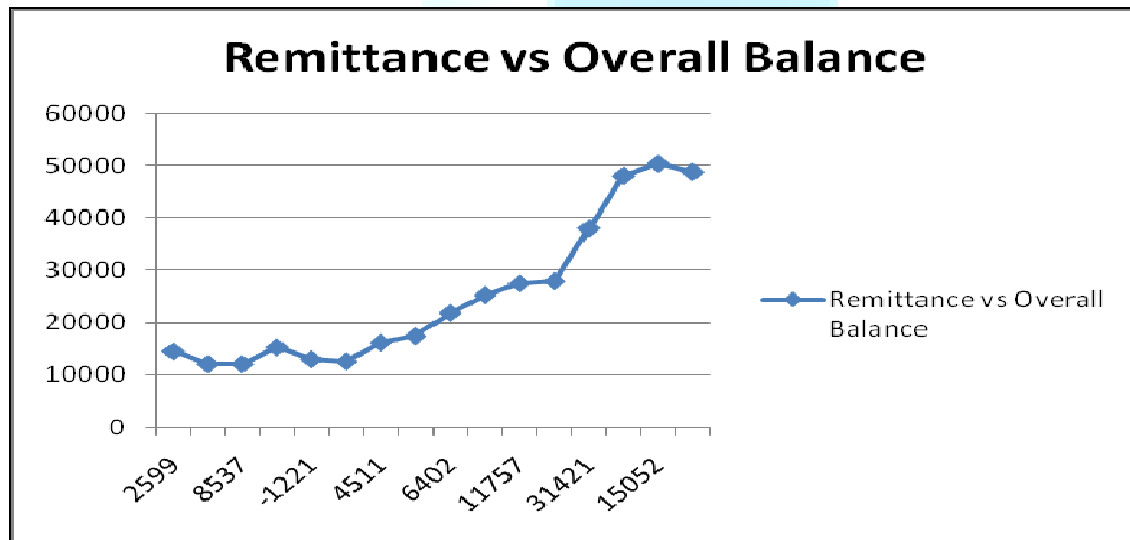


source: Indiatat.com

figure : 6

Inflation is directly contributing to increase in imports. More the inflation, costlier domestic products, less exports. Reduction in inflation is the key factor for increasing the exports. The relation between the inflation and exports is shown below. The Inflation is also negatively co-related to Exports.

INVISIBLE

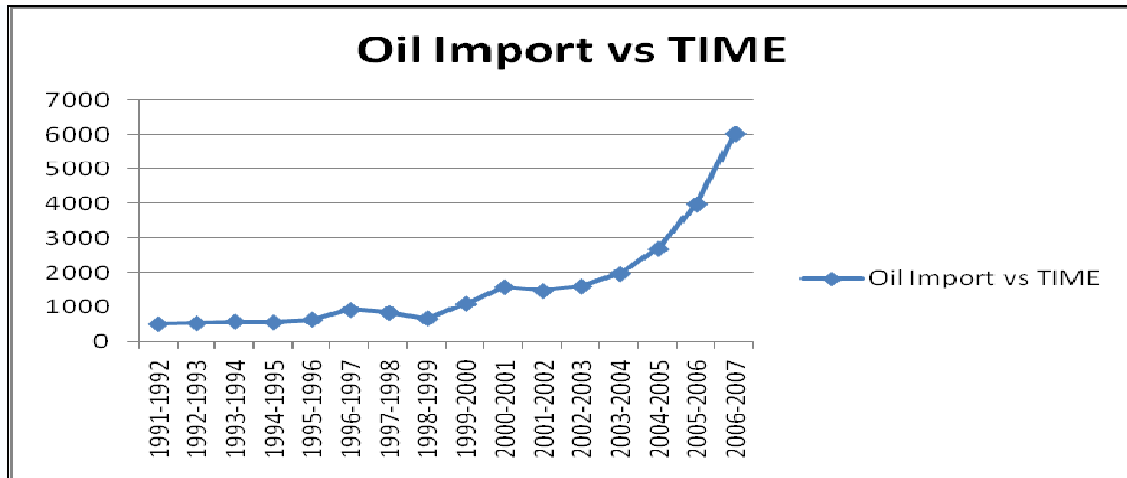


source: Indiatat.com

figure : 7

After 1991, invisible (services, Transfer and income) factor has contributed a lot in terms of current account due to which BOP has increased. The relation is shown above.

OIL IMPORTS

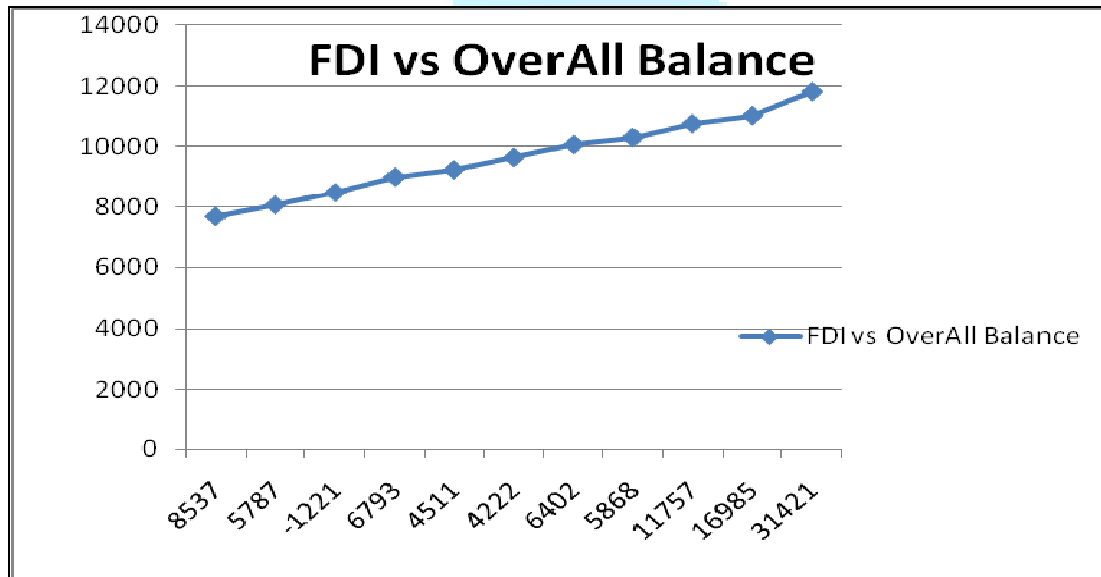


source: Indiatstat.com

figure : 8

As Growth increased the Oil imports Bill of India also increased to all time high. The oil contributed about 80% of India's Imports. Following table shows the relation between the oil imports per time.

FOREIGN INVESTMENT

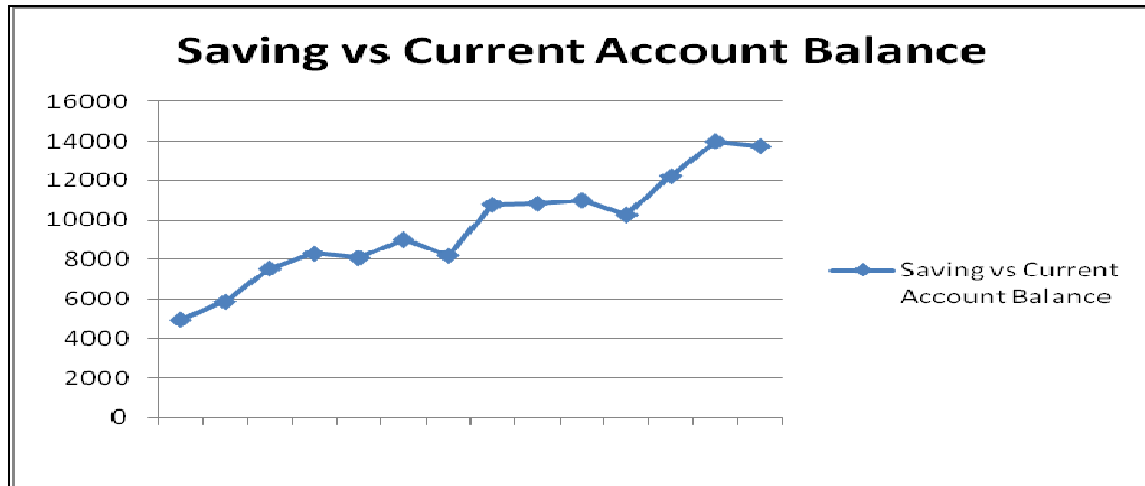


source: Indiatstat.com

figure : 9

The liberalization of economy has resulted to make the India more lucrative in terms of investment opportunity due to tax rebates and promoting the foreign investments. The following diagram shows the overall balance increase due to FDI.

RELATION BETWEEN CHANGES IN CA BALANCE AND SAVINGS



source: Indiastat.com

figure : 10

The data for Savings-investment is shown in the graph. The House-hold saving is highest contributor of savings.

RELATIONSHIP OF BALANCE OF PAYMENTS WITH INFLUENCING FACTORS

We have considered following factors while calculating a linear relationship of balance of payments with other factors:

- *Exchange Rate: Exchange rate plays a major role in influencing export and import. Depreciation in currency makes export cheaper for other nations and an appreciation makes import cheaper for our own country population.*
- *Inflation rate: Inflation also plays a role in influencing export and import. If inflation rate is more in other countries as compared to our countries, then exports will increase and vice versa.*
- *Expenditure: Expenditure also plays a role in influencing Balance of payments.*
- *Investments: Investments includes foreign investments, which also increase the flow of other currency in our country. More the investments more will be the return, which can also lead to increase in exports.*
- *Savings: Savings have an inverse effect on our balance of payment. As more savings results in increased spending power and which indirectly results in increase in import.*
- *Remittances: Remittances, which is transfer of money by foreign workers to their home country have a direct role in increasing the cash balance of the country.*
- *Crude oil import figure: Crude oil import figure have an inverse relationship with balance of payments figure. It directly increases our imports figure.*
- *Invisibles: Invisibles have a direct role in increasing the current account.*

ANALYSIS

Using a multiple regression model we assume that

BOP = function (exchange rate, inflation rate, expenditure, investments, savings, remittances, crude import)

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965 ^a	.932	.822	4015.421

- a. Predictors: (Constant), Expenditures(Cr), Saving, Investments(Cr), Inflation, CRUDE OIL IMPORT, Exchange Rate, Invisible, Remittances
- b. Dependent Variable: Over All Balance

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3824.748	54758.913		-.070	.947
	Exchange Rate	67.251	1705.574	.054	.039	.970
	Inflation	382.503	1699.373	.125	.225	.831
	CRUDE OIL IMPORT	-4.296	10.252	-.297	-.419	.693
	Invisible	.420	.949	.396	.443	.676
	Remittances	.035	.996	-.040	-.035	.973
	Saving	-1.523	1.458	-.554	-1.044	.344
	Investments(Cr)	.367	.197	.825	1.865	.121
	Expenditures(Cr)	.044	.139	.596	.317	.764

- a. Dependent Variable: Over All Balance

From the multiple regression model we can conclude that

$$BOP = -3824 + \text{Exchange rate} * 67.25 + \text{inflation rate} * 382.5 - \text{Crude oil import} * 4.296 + \text{invisible} * .420 + \text{Remittances} * .034 - \text{Savings} * 1.523 + \text{investments} * .367 + \text{Expenditures} * .44$$

CONCLUSION

If we look at the equation, we can conclude that import of crude oil and Savings have an inverse relationship with final balance of payment. 96% of the change in India’s BOP can be attributed to the factors or determinants listed. Rest 4% is dependent on other factors. The factors have a strong correlation between them (table 1). Inflation is negatively correlated with all other factors whereas rest other determinants are positively correlated. The critical value of $F_{(7,111)}$ at 5% level of significance is less than calculated F value (table 2). Therefore we can conclude that differences do exist among the determinants with respect to overall balance of payment.

CORRELATION TABLE (BETWEEN DETERMINANTS)

	Exchange Rate	Inflation	Crude Oil Import	Invisible	Remittance	Savings	Investment	Expenditure
Exchange Rate	1							

Inflation	0.929927	-1						
Crude Oil Import	0.488051	0.663868	1					
Invisibles	0.5836264	0.769132	0.9675587	1				
Remittance	0.6671593	0.852482	0.8860509	0.9430827	1			
Savings	0.8766637	0.903709	0.8055264	0.9003786	0.7672926	1		
Investment	0.6749341	0.81634	0.9047903	0.909723	0.9169274	0.8446616	1	
Expenditure	0.8502167	0.958307	0.9203819	0.9479009	0.9635861	0.9131845	0.9076639	1

table: 1

ANOVA (SINGLE FACTOR FOR DETERMINANTS)

Anova: Single Factor						
SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Column 1	16	628.9326	39.30829	53.51371		
Column 2	16	155.5	9.71875	14.04063		
Column 3	16	25627.72	1601.732	2286763		
Column 4	16	256365	16022.81	2.27E+08		
Column 5	16	401232.4	25077.03	1.93E+08		
Column 6	9	72606.79	8067.421	3371255		
Column 7	15	360369	24024.6	4.69E+08		
Column 8	15	3900685	260045.7	1.72E+10		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	8.26E+11	7	1.18E+11	51.63457	4.75E-32	2.093138
Within Groups	2.54E+11	111	2.29E+09			

Total	1.08E+12	118				
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table: 2

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INCOME INEQUALITY AND PROGRESSIVE INCOME TAXATION IN CHINA AND INDIA

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ABSTRACT

This paper evaluates the income tax reforms in China and India. The combination of fast income growth and under-indexed tax schedule in China implies that the fraction of the Chinese population subject to the income tax has increase from less than 0.1 percent in 1986 to about 20 percent by 2008, while it has stagnated around 2-3 percent of the population in India. Chinese income tax revenues, as a share of GDP, increase from less than 0.1 percent in 1986 to about over 1.5 percent in 2005 and 2.5 percent in 2008, while the constant adaptation of exemption levels and income brackets in India have caused them to stagnate around 0.5 percent of GDP.

INTRODUCTION

Current debates about policy reform in LDCs often focus on improving the delivery of social service, the design of market-friendly economic institutions, the effectiveness of poverty reduction programs, or the role of trade and market liberalization. Perhaps surprisingly, they rarely deal explicitly with tax reform and the need to develop modern income tax systems in those countries. This is unfortunate for at least three reasons. First, poor countries often rely excessively on highly distortionary tax instruments such as taxes can help to increase the tax revenues needed to finance public goods. In countries such as China and India, tax revenues are currently around 10-15 percent of GDP, far below any country in the West that have been able to develop a proper education, health and infrastructure systems. Finally, many LDCs have witnessed a sharp rise in income inequality during the recent period. Progressive taxation is one of the least distortion policy tools available that controls the rise in inequality by redistributing the gains from growth.

In this paper, we choose to focus on the case of progressive income taxation in China and India. Although a progressive individual income tax system has been in place in China since 1980, it has received very little attention so far, probably because the fraction of the population with income above the exemption threshold was negligible until the 1990s (less than 1 percent). Using annual, 1986-2008 tabulations from urban household income surveys on levels and shares of top incomes in China over this period, as well as series on theoretical numbers of taxpayers and total income tax receipt. We were also able to compare our Chinese findings with similar series for India. The Indian tax administration has been compiling detailed tabulations of income tax returns every year since the creation of a progressive income tax in India (1922). India tax returns tabulations were recently exploited by Benerjee and Piketty (2004-2005) to study the long run evolution of top income shares in India, and we use and update their results as a comparison point for our Chinese series. Our main result is simple, but powerful. The combination of fast income growth and under-indexed tax schedule in China implies that Chinese income tax revenues grow very fast as a fraction of GDP, while the constant adaptation of exemption levels and income brackets in India prevents the income tax from playing such a powerful role. According to our estimates, the fraction of the population in China subject to the income tax has increased from less than 0.1 percent in 1986 to about percent by 2008, while it has stagnated at around 2 percent-3 percent in India. Income tax revenues in China have boomed, from less than 0.1 percent of GDP in 1986 to over 1.5 percent by 2005 and 2.5 percent by 2008, while in India, they have stagnated at around 0.5 around 0.5 percent of GDP.

Data and Methodology

The Chinese data used in this paper comes from the urban household income surveys collected by China's National Statistical Bureau (NSB). These surveys are designed so as to representative of urban China. Between 13,000 and 17,000 households are surveyed each year until 2002, where the sample rose to 45,000-50,000 up to 2008. The micro-files for these surveys are unfortunately not available for all years, and we asked the NSB to provide us with annual, 1986-2008 tabulations and individual tabulations. Household tabulations report the number of households whose total household income falls into that bracket, their average total income and household size, as well as their average income broken down by income sources (wage income, business income, capital income and transfer income) for a large number of income brackets (and in particular a large number of top income brackets).

Individual tabulations report the number of individuals whose individual income and household size, as well as their average income broken down by income sources for a large number of income brackets. In practice, some from of income cannot be properly attributed to a specific individuals within the household (this is particularly true of transfer income and capital income). Hence, the total income aggregates reported in household tabulations are large than in individual tabulations, and various adjustments are necessary when one uses the latter. However, the important advantage of individual tabulations is that China's income tax applies to individuals' income (rather than household income).

We used standard Pareto interpolation techniques to approximate the form of the Chinese household and individual distribution of income, and we then used these structural parameters to compute top fractiles' incomes and to make income tax simulations. The Chinese data appears to be very well approximated by a Pareto distribution (for any given year, Pareto coefficients are extremely stable within the top decile), although there is some presumption that top incomes are underestimated in the survey data. For each year of the 1986-2008 periods, we computed income thresholds and average incomes for fractiles P0-90, P90-95, P99.5-99.9 and P99.9-100. Projection for the 2004-2015 periods were made by assuming nominal income trends by fractile similar to those observed during the 1996-2008 period. We did not attempt to use similar tabulations from rural household surveys. According to the 2000 China Population Census, over 97 percent of households in rural areas are agricultural households, and are hence exempt from income tax. Average rural income was in 2001 more than 3 times smaller than average urban income. So given that our focus is on top incomes and progressive income taxation, the exclusion of rural households should not be too problematic. In fact, our simulated income tax revenues (based solely on urban household surveys) appear to be reasonably close to actual income tax revenues, both in levels and in trends.

All of the Indian data are borrowed from Banerjee and Piketty (2004, 2005), who used Indian income tax returns tabulations publish in "All-India Income Tax Statistics" brochures (annual available since 1922) to estimate top income levels and national accounts to compute the average income denominator. Top income share estimates based upon income tax returns are likely to be higher than estimates based on survey data (as the latter generally underestimates top incomes), but there is no obvious reason why the trends should not be comparable. The Banerjee- piketty series provide annual income thresholds and average incomes for all fractiles up until 2001.

RESULTS

Real per capita GDP increased by almost 200 percent in China between 1986 and 2008 (6.4 percent per year), and by slightly less than 80 percent in India (3.3 percent per year). As we move up in the income hierarchy, the growth trend gets even bigger. Figure 1 show that, according to our estimates, the top 1 percent income share has increased by more than 120 percent in China between 1986 and 2008, and by approximately 50 percent in India. In the pre-reform era, all Chinese workers worked for the state and paid an implicit tax from their wages. Expansion of the private sector by the market reforms decreased the government's ability to tax directly. Following other countries, China developed an individual income taxation system, which officially began in 1980. In order to avoid negative public opinion, the deductible amount was set so high that virtually no one had to pay income taxes in 1980. China's income tax law has changed very little since its creation in 1980. Nominal income brackets and graduated marginal rates (from 5 percent to 45 percent) applied to both wage and non-wage income have remained unchanged since 1980. The only major change is that the nominal exemption threshold for wage earners (there exists no exemption for non-wage income) has been raised from 9,600 yuans

per year in fiscal years 1980-1998 to 12,000 yuans in 1999-2003, 14,00 yuans in 2004-2005 and 19,200 yuans since 2006. This is substantially less than nominal income growth. In 1986, the exemption threshold was about 7 times larger than average individual income (1,400 yuans) and more than 3 times larger than the P99 threshold of the distribution (3,000 yuans). 2008, the exemption threshold has passed below average income (20,400 yuans), and was 4.5 times smaller than the P99 threshold (93,100 yuans).

In contrast to the Chinese income tax, the Indian income tax is a much older institution, since it was created in 1922 by the British. Moreover, it has always been an integrated system treating all income sources equally: Indian Progressive tax schedules apply to total individual income, irrespective of where the income comes from. Most importantly, the tax schedule has been changed almost constantly in India during the 1986-2008 period, with a general decline in tax rates and a continuous increase in the exemption threshold and the income brackets. In effect, the rise in the exemption threshold – from 15,000 rupees in 1986 to 150,000 rupees in 2008 – has been almost as large as the rise in nominal income growth – from 4,400 to 56,300 rupees for average income, and from 14,00 to 192,400 rupees for the P99 threshold..

The simple but powerful implication of these sharply differing evolution is that the fraction of the population subject to the income tax has increased enormously in China – from less than 0.1 percent of the population in 1986 to about 15 percent-20 percent by 2008; while it has risen modestly in India: less than 3 percent of the population was subject to the income tax in 2008, versus less than 1 percent in 1986. The income tax has become a mass tax in China., while it has remained an elite tax in India (see Figure 4). Moreover, effective tax rates paid by the population subject to tax have raised considerable in China, due to the fact that income brackets have remained the same in nominal terms since 1980s to over 1.5 percent by 2005 and 2.5 percent by 2008, while they have stagnated around 0.5 percent of GDP in India.

We have also made projections for the 2008-2015 period assuming constant trends in income tax law parameters. India, if exemption level and income brackets keep being increased at the same pace as in the past decade, then both the proportion of population subject to tax and tax revenues will keep stagnating (around 2 percent-3 percent of population and 0.5 percent of GDP, respectively). For the case of China, we have assumed that the nominal exemption level will be increased during the 2008-2015 period at the same average annual rate as that observed during the 2003-2008 period, but that income brackets would remained fixed in nominal terms (as they did in the past). The consequences for tax revenues would be spectacular: the proportion of the population subject to tax would stabilize around 20 percent (roughly 30 percent-35 percent of urban wage earners), but income tax revenue would well exceed 5 percent of Chinese GDP before 2015. In cases the exemption threshold was to remained fixed in nominal terms during the 2008-2015 period, then by 2015 the proportion of the population subject to tax would reach 50 percent (roughly 75 percent of urban wage earners), and income tax revenue would well exceed 10 percent of Chinese GDP.

CONCLUSION

If our projections appear to be correct, then China will have gone through its fiscal revolution. Moving from an elite income tax raising less than 1 percent of GDP to a mass income tax raising around 4-5 percent of GDP is exactly the kind of fiscal modernization process followed by Western countries during the 1914-1950 period (when their income levels were similar to current Chinese level). Although Indian

income tax revenues might increase during the coming years, the prospects for India look less good, both because of lower income growth and higher exemption and bracket indexation. One reason why India faces more difficulties than China in making its income tax a mass tax might also be that the proportion of formal wage earners in the labor force is ridiculously low in India. There much that policy makers and economists can do in order to improve the functions and implications of progressive income taxation in countries like China and India. Given that income taxation in countries like China functions and implication of progressive income taxation in countries like China and India. Given that income taxation is about to become something big, it is urgent to put income tax reform at the top of the policy agenda. For instance, China's authoritarian government will probably not be able to under-index its exemption threshold forever and the preferential tax treatment of wage earners will need to be addressed at some point. Conversely, the Indian democracy still needs to find its way towards fiscal modernization, which requires convincing the electorate that a mass income tax is a useful policy tool. These are important democratic challenges for the economic development of China and India.

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CHALLENGES FACED BY WOMEN ENTREPRENEURS IN A DEVELOPING ECONOMY**DR. SHEFALI VERMA THAKRAL**

Associate Professor & Desk Editor, M.M. University Journal of Management Practices (ISSN 0974 7257)

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MULLANA – 133 203**ABSTRACT**

The emergence of women entrepreneurs and their contribution to the national economy is quite visible in India. The number of women entrepreneurs has grown over a period of time, especially in the 1990s. Women entrepreneurs need to be lauded for their increased utilization of modern technology, increased investments, finding a niche in the export market, creating a sizable employment for others and setting the trend for other women entrepreneurs in the organized sector.

While women entrepreneurs have demonstrated their potential, the fact remains that they are capable of contributing much more than what they already are. In order to harness their potential and for their continued growth and development, it is necessary to formulate appropriate strategies for stimulating, supporting and sustaining their efforts in this direction. Such a strategy needs to be in congruence with field realities, and should especially take cognizance of the problems women entrepreneurs face within the current system.

KEYWORDS

Enterprises; entrepreneurial problems; successful entrepreneurial-guidelines.

INTRODUCTION

Entrepreneurship is the core of economic development. It is a multi-dimensional task and essentially a creative activity. Entrepreneur is key factor of entrepreneurship. Women entrepreneurship is a recent phenomenon and in the process have to face various problems. Therefore, this study was conducted on hundred women entrepreneurs selected through random and snowball sampling technique from four zones of Haryana. Nursing homes, boutiques, handloom units, beauty parlors carpet making units and general stores were the enterprises selected for study. The objectives of the endeavor were to ascertain the financial, marketing and production constraints faced by women in their enterprises; assessment of their health status, work place facilities and to develop guidelines for becoming a successful entrepreneur. Poor location of unit, tough competition from larger and established units, and lack of transport facility, lack of rest and sleep and non-availability of raw material were the significant problems faced by entrepreneurs. The factors causable to these problems were; difficulty in affording own vehicle, not being popular, heavy schedule of work and long working hours. Common

entrepreneurial problems can be dealt by formulating self help mutually aided groups. Support mechanism such as institutional credit need to be strengthened to keep entrepreneurs aware about loaning schemes/credit facilities for further expansion.

OBJECTIVES OF THE STUDY

Entrepreneur is the key factor of entrepreneurship and now women have been recognized as successful entrepreneurs as they have qualities desirable and relevant for entrepreneurship development. In the process of entrepreneurship, women have to face various problems associated with entrepreneurship and these problems get doubled because of her dual role as a wage earner and a homemaker. According to Reddi (1991) women entrepreneurs in Goa feel frustrated at times because they need to spare their time and energy, both towards their business as well as domestic affairs. Women in India constitute a larger proportion of total unemployed population and hence it is imperative to find out the entrepreneurial constraints faced by them. Therefore, with a view to develop guidelines on the basis of problems faced by them, this study has been done with the following specific objectives:

1. To ascertain the financial, marketing and production constraints faced by women in their enterprises;
2. Assessment of their health status and work place facilities;
3. To develop guidelines for becoming a successful entrepreneur.

METHODOLOGY

The study was conducted in four zones of HARYANA. Random sampling technique was adopted for the selection of study area. A sample of 100 women respondents (25 each from one zone) was taken on the basis of criterion that they should be running their enterprise independently and not in partnership. Enterprises taken up for the study were boutiques, beauty parlours, handloom units, nursing homes, P.C.O's, general stores and carpet making units. Well structured and presented interview schedule was used for collecting primary data by survey method. Tabular analysis techniques employed were: percentages, standard deviation, and coefficient of variation, chi-square test, analysis of variance (ANOVA).

RESULTS AND DISCUSSION

Financial Problems: Finance is a most important aspect of any business. Non-availability of long-term finance, regular and frequent need of working capital and long procedure to avail financial help were found to be the financial problems faced by respondents based on the multiple responses given by them (Table1). Non availability of long-term finance was found to be a problem faced by women entrepreneurs of Ludhiana (Kapoor, 1998).

Marketing Problems: During the process of marketing of products women entrepreneurs faced certain problems viz. poor location of shop, lack of transport facility and tough competition from larger and established units. There was Am significant difference in the problems faced by entrepreneurs of four zones (Table 2). Difficulty in affording own vehicle was a major factor causing marketing problem.

Production Problems: Production problems faced by maximum (14%) respondents were non availability of raw material (Table 3). According to Kamulun and Kumar (1992) non-availability of raw material was one of the reasons to the slow growth of women entrepreneurs. Other production problems were non-availability of machine or equipment, lack of training facility and non availability of labor. Major causable factors leading to production problems were high cost of required machine or equipment.

Health Problems: Major health problems faced by women entrepreneurs were tension, backache, eyestrain fatigue and headache by 22, 15, 15, 14 and 8 percent respondents respectively. Majority of respondents (36%) of zone-II faced these problems and by minimum (15%) of Zone- IV. Yadav (1993) found that women respondents faced the problem of feeling fatigued after returning home. Causable factors were lack of rest and sleep and heavy schedule (Table 4).

Work Place Problems: The work place facility problems faced were viz. inadequate work place for water, less entrance for natural light and improper space for work. According to Ahlawat (1999) women entrepreneurs faced the problem of lack of proper places. Work place problems were faced by maximum (12%) respondents of zone-II (Table 5). Causable factors were water shortage, less entrance for natural light and lack of sufficient area for business. Ho: Relationship between Major Problems faced by Women Entrepreneurs and Causative Factors Major problems faced by women entrepreneurs were poor location of unit, tough competition from larger and established units because in all the enterprises work was done manually so it was very tough to compete with those enterprises in which electrical equipments and big machineries were used. Other problems were lack of transport facility, lack of time for household work, non-availability of raw material, heavy schedule and lack of time for rest and sleep leading to mental tension and fatigue. The factors causable to these problems were difficulty in affording own vehicle, product not being popular, heavy schedule of work and long job hours. Significant relationship was observed between major problems faced by women entrepreneurs and causative factors by applying chi-square test (Table 6). Kamulun and Kumar (1992) observed non-availability of raw material leading to slow growth of women entrepreneurs. The study depicted that women faced barriers in areas like financial, marketing, health, work place and production. Therefore, following guidelines have been recommended for becoming a successful women entrepreneur: Entrepreneur should keep abreast of knowledge about new techniques, financial institutions, training institutions and marketing linkages. Some agencies working for women entrepreneurs are:

- a). SISI (Small Industry Service Institute)
- b). DIC (District Industry Centre)
- c). STEP (Science and Technology Entrepreneurship Park)
- d). Behavioural Science
- e). Centres
- e). Indian Institute of Technology (Delhi)

Prior to selection of area for development of enterprise information about following aspects must be collected:

- a). Site or location

- b). Physical facilities
- c). Transportation facilities
- d). Place for disposal of waste material

Self-help mutually aided groups must be formulated for overcoming common entrepreneurial problems.

Women should shift to the non-traditional sectors of entrepreneurship in order to earn more.

CONCLUSION

Women entrepreneurs faced constraints in aspects of financial, marketing production, work place facility and health problems. Financial problems faced were non-availability of long-term finance, regular and frequent need of working capital. Poor location of shop and lack of transport facility were major marketing problems. Production problems included the problem of non-availability of raw material. Entrepreneurs of zone-IV mainly faced health problems such as fatigue, tension, and headache. Women entrepreneurs also faced problem of improper water and space facility. Guidelines framed as a solution to these problems can help women entrepreneurs to deal with these problems effectively.

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ANNEXURE

Table 1: Financial problems and causative factors faced by women entrepreneurs (N=100)

S.No.	Problem and Factors	Zone-I	Zone-II	Zone-III	Zone-IV	Percentage
<i>I Problems</i>						
1	Availability of long term finance	1 (4)	2 (8)	1 (4)	2 (8)	6
2	Regular and frequent need of working capital	2 (8)	1 (4)	2 (8)	3 (12)	8
3	Long procedure to avail financial help	-	-	-	1 (4)	1
<i>II Factors</i>						
1	High cost of living	1 (4)	2 (8)	2 (8)	1 (4)	6
2	Too many dependents to support	2 (8)	-	1 (4)	- 3	

Figures in parentheses indicate percentages

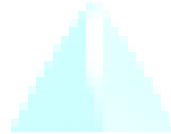


Table 2: Marketing problems and causative factors faced by women entrepreneurs (N=100)

S.No.	Problem and Factors	Zone-I	Zone-II	Zone-III	Zone-IV	Percentage
<i>I Problems</i>						
1	Lack of demand in local market	-	-	-	-	-
2	Tough competition from larger and established units	2 (8)	1 (4)	6 (24)	-	9
3.	Poor location of shop	5 (20)	15(60)	5 (20)	1 (4)	26
4.	Lack of transport facility	-	1 (4)	3 (12)	7 (28)	11
5.	Lack of marketing center	-	-	1 (4)	1 (4)	2
<i>II Factors:</i>						
1	Inadequate bus timings	-	-	-	3 (12)	3
2	Difficulty in affording own vehicle	-	2 (8)	4 (16)	5 (20)	11
3	Not being popular	3 (12)	1 (4)	4 (16)	-	8

Figures in parentheses indicate percentages



Table 3: Production problems and causative factors faced by women entrepreneurs (N=100)

S.No.	Problem and Factors	Zone-I	Zone-II	Zone-III	Zone-IV	Percentage
<i>I Problems</i>						
1	Non availability of raw material	5 (20)	6(24)	3 (12)	-	14
2	Non availability of machine or equipment	1 (4)	1 (4)	-	-	2
3	Training facility	-	-	2 (8)	1 (4)	3
4	Repairing facility	2 (8)	-	-	4 (16)	6
5	Non availability of labour	-	2 (8)	-	-	2
6	Non availability of shop / place	1 (4)	-	-	2 (8)	3
7	Workers shirk work	1 (4)	2 (8)	-	-	3
<i>II Factors</i>						
1	High cost of required machine or equipment	-	-	2 (8)	5 (20)	7
2	Overcrowded area	1 (4)	3(12)	-	2 (8)	6
3	Non availability of persons for machine repair	2 (8)	1 (4)	2 (8)	-	5

Figures in parentheses indicate percentages of total sample



Table 4: Health problems and causative factors faced by women entrepreneurs (N=100)

S.No.	Problem and Factors	Zone-I	Zone-II	Zone-III	Zone-IV	Percentage
<i>I Problems</i>						
1	Backache	4 (16)	6 (24)	1 (4)	4 (16)	15
2	Eye-strain	4 (16)	5 (20)	4 (16)	2 (8)	15
3	Tension	3 (12)	12 (48)	4 (16)	3 (12)	22
4	Fatigue	3 (12)	3 (12)	6 (24)	2 (8)	14
5	Problem of joints	4 (16)	-	-	2 (8)	6
6	Respiratory problems	3 (12)	-	-	-	3
7	Headache	-	4 (16)	4 (16)	-	8
8	Body aches	1 (4)	2 (8)	-	1 (4)	4
9	Blood pressure	-2 (8)	-	2	-	-
10	Gastric trouble	3 (12)	2 (8)	-	-	5
<i>II Factors</i>						
1	Lack of rest and sleep	2 (8)	12 (48)	4 (16)	3 (12)	21
2	Heavy schedule	4 (16)	9 (36)	1 (4)	(8)	16
3	Uncomfortable working posture	1 (4)	-	2 (8)	2 (8)	5

Figures in parenthesis indicate percentages of total sample

Table 5: Work place facility problems and causative factors faced by women entrepreneurs (N=100)

S.No.	Problem and Factors	Zone-I	Zone-II	Zone-III	Zone-IV	Percentage
<i>I Inadequate work place Problems</i>						
1	Space	1 (4)	3 (12)	-	-	4
2	Natural light	1 (4)	2 (8)	-	-	3
3	Artificial light	-	1 (4)	-	-	1
4	Ventilation	-	1 (4)	-	-	1
5	Water	2 (8)	3 (12)	-	-	5
<i>II Factors</i>						
1	Lack of sufficient area for business	1 (4)	-	-	-	1
2	Air pollution	-	1 (4)	-	-	1
3	Water storage	2 (8)	-	-	-	2
4.	Less entrance for natural light	1 (4)	2 (8)	-	-	3

Figures in parentheses indicate percentages

MARKET VALUE ADDED: A STUDY IN THE SELECT INDIAN SOFTWARE COMPANIES

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ABSTRACT

The software industry has a strong future regardless of whether its products are as a service, or as a component or in packaged form. The software industry is going through a rapid and significant transition. India's domination in the IT and software sector and its growing reputation as one of the world's best outsourcing destinations have created good basis for future prospects. Wealth creation is a desire to be rich, desire to have control over the aspects that affect financial life, a desire to command respect with the control of money power. Globalization, outsourcing and world flattening advances in technology continue to rock the software industry in ways that will significantly alter the way that technologists do business. A SWOT analysis of the Indian software industry may reveal strategies for continued predominance of the Indian software industry. The Information Technology (IT) sector is doing remarkably well and is registering high growth rates for the past few years. The software industry, which is a part of the IT industry has been the major driver of the IT industry and has been responsible for the phenomenal growth achieved by the IT industry. The exports are pioneering the software industry. Maximizing shareholder value is becoming the new corporate standard in India. The corporates, which gave low preference to the shareholder inquisitiveness are now bestowing the utmost inclination to it. In order to help the corporates to generate value to the shareholders, value-based management systems have been developed. If a business enterprise is determined to maximize the economic value of the shareholders claim to the assets, then it is quite beyond price to all those who are patronized stakeholders. Creating value is the core principle on which the economic system is based. No enterprise survives or glows if it fails to generate wealth for the stakeholders. In the context of an impressive performance by the IT sector and realizing the significance of MVA, the researcher has made an attempt to study the Market Value Added performance in the Indian software industry.

KEY WORDS

Value Based Management (VBM), Economic Value Added (EVA), Return on Operating Invested Capital (ROIC), Total Market Value (TMV), Total Invested Capital (TCI), Earning Before Interest and Taxes (EBIT).

INTRODUCTION

The software industry has a strong future regardless of whether its products are as a service, or as a component or in packaged form. The software industry is going through a rapid and significant transition. India's domination in the IT and software sector and its growing reputation as one of the world's best outsourcing destinations have created good basis for future prospects. Wealth creation is a desire to be rich, desire to have control over the aspects that affect financial life, a desire to command respect with the control of money power. Wealth creation includes the decision making processes of a business unit whether the unit grows organically or through acquisition. Wealth creation is not material, it is spiritual by nature with the ability to produce or manifest material wealth. Globalization, outsourcing and world flattening advances in technology continue to rock the software industry in ways that will significantly alter the way that technologists do business.

Wealth creation is considered imperative for equitable distribution of the same. This creation and distribution process will go towards alleviating the plight of the downtrodden. The IT / ITES industry has set this process of wealth creation in motion. Wealth creation is the key to financial freedom and building one's wealth requires the right information, planning and making skilful investment choices. The key to creating wealth is adding value. All financial success, especially business success, is based on adding value. It is based on the old saying, "find a need and fill it". Adding value is the way that all fortunes are made.

Inflationary pressures, higher perceived business risk and market imperfections are the main reason for the higher cost of capital. (PricewaterhouseCoopers 1999). While macro-economic conditions and market imperfections are beyond the control, Indian software companies could try to enhance their business focus, improve investor perception, diversify to reduce revenue volatility, and ensure that they comply with strict reporting norms that encourage corporate transparency as well as increase their investor base. A SWOT analysis of the Indian software industry may reveal strategies for continued predominance of the Indian software industry.

VALUE BASED MANAGEMENT

Value Based Management (VBM) has been referred to as the "fastest and hottest ticket" to shareholder wealth. Incorporating such techniques as Economic Value Added (EVA), Return on Operating Invested Capital (ROIC), and Market Value Added (MVA), VBM is a complete financial management and incentive compensation system that guides decision-making at every level. Adopting companies use VBM as a guide in financial planning, monitoring and controlling operations. Shareholder value creation is represented by the difference between the market value of the firm's equity and the equity capital invested by shareholders. Former reflects the value imputed by financial market on the equity of the firm and latter reflects the actual amount of money contributed by equity share holders by way of capital and retained earnings.

MARKET VALUE ADDED

The market value of a business at a point in time is an approximation of the fair value of the business entire debt and equity capitalization. This can be arrived at by taking the number of shares and multiplying by the share price and adding the book value of long and short term loans net of any cash deposits. Market value at a point in time is equal to the total capital employed plus or minus the net present value of all future economic profits. Therefore, market value is maximized by maximizing the present value of future economic profits. In order to measure shareholder's wealth Stewart invented the term Market Value Added. MVA is defined as excess of market value of a company over its invested capital. MVA is a cumulative measure of the value created by management in excess of the capital invested by shareholders. According to Ehrbar and Hamel (1997), "...there is one measure, Market Value Added (MVA), that captures all the dynamics of corporate performance"

MVA is the value added by the management to the equity capital and debt entrusted to it by the company's share holders. MVA is a market-generated number calculated by subtracting the capital invested in a firm (C) from the sum (V) of the total market value of the firm's equity and the book value of its debt: $MVA_t = V_t - C_t$. While this measure of value depends on a book value of capital which is subject to inflation influences, it may provide a useful market indication of present and future value creation by representing the difference between the capital invested and the present value of the cash flows expected from that capital. It is an accomplishment of a firm with a high level of MVA just to maintain that level, as this requires the satisfaction of both present and future earning expectations.

Market Value Added is identical by meaning with the market-to-book-ratio. The difference is only that MVA is an absolute measure and market-to-book-ratio is a relative measure. If MVA is positive means the market-to-book-ratio is more than one. Negative MVA means market-to-book-ratio less than one. According to Stewart, Market Value Added tells us how much value company has added to or subtracted from, its shareholders investment. Successful companies add their MVA and thus increase the value of capital invested in the company. Whether a company succeeds in creating MVA (increasing shareholders value) or not, depends on its rate of return. If a company's rate of return exceeds its cost of capital, the company will sell on the stock markets with premium compared to the original capital (has positive MVA). On the other hand, companies that have rate of return smaller than their cost of capital sell with discount compared to the original capital invested in company. The company's positive or negative MVA entirely depends on the level of rate of return compared to cost of capital. This applies to EVA also. Hence, positive EVA implies positive MVA and vice versa. Market value Added is equal to present value of all future EVAs. Increasing EVA of a company increases its Market Value Added.

MVA – THE BASIC PREMISE

The basic premise of the method is that, from a shareholders perspective, the extra value created by the use of capital is one of the major measures of success for a company's management. When shareholder buy stock, they are hiring a company to create value for them. If a company does that, it is successful and the measure of its success is determined by subtracting the total amount of money invested from the total market value of the company. The Total Market Value (TMV) of a company is the value of its stock and debt. Total invested capital (IC) includes all stock and debt offerings, retained earnings, bank loans and certain investments in future earnings like R & D. TMV minus IC equals MVA. The greater the difference, the more a company's management has succeeded.

The basic problem with using this system is that it doesn't rely on a true market value but on a subjective market value. True market value is pretty hard to figure because it is more than what something actually sells for, on a given day.

MVA is the perfect measure of the company's ability to create wealth, which can be calculated only at the level of the entire company and is as volatile as any market index. To determine whether management has created or destroyed value, the market value of the firm's capital (both equity and debt capital) may be compared to the capital invested by shareholders and lenders (the capital employed in the firm). The difference between the market value of capital and capital employed is called Market Value Added (MVA).

MVA describes the value added to a particular share over its book value. It enlightens how much value a shareholder has added to his wealth, which he has invested in the share. Accordingly, a company with an objective of enhancing the shareholders wealth should attempt to capitalize on its MVA. MVA is derived by deducting the book value of the firm from its market capitalization. The book value of the firm is equity share capital plus reserves and surplus, minus any revaluation reserve and miscellaneous expenses. Market Value of the firm can be arrived at by dividing Earnings Before Interest and Taxes (EBIT) by overall cost of capital.

COMPUTATION

MVA = Market Value of Capital – Capital Employed.

MVA can also be computed with the following formula

MVA = Market Value of the firm – Book Value of the firm

$$\text{Market Value of the firm} = \frac{\text{EBIT}}{K_0}$$

Where EBIT = Earnings Before Interest and Taxes

K_0 = Weighted Average cost of Capital (WACC)

Book Value of the firm = Equity share capital + Revaluation reserves + Miscellaneous Expenses.

PROPERTIES OF MVA

The importance of MVA stems from the following properties;

- MVA increases when the firm undertakes positive NPV projects.
- NPV = Present value of cash inflows from the project – Capital employed in the project.
- Maximising MVA is consistent with maximizing shareholder value.

EVA AND MARKET VALUE ADDED

- The relationship between EVA and Market Value Added is more complicated than the one between EVA and Firm Value.
- The market value of a firm reflects not only the expected EVA of Assets in Place but also the Expected EVA from Future Projects.
- To the extent that the actual Economic Value Added is smaller than the expected EVA, the market value can decrease even though the EVA is higher.

ROLE OF MVA IN EFFICIENT CAPITAL ALLOCATION

Market Value Added (MVA) is one of the external indicators which gives the utmost satisfaction to the investors. Investors always desire an increase in the share prices. The most reliable measure of management's long term success in adding value is known as "Market Value Added". MVA is the difference between company's current market value and the amount of capital that shareholders have committed to the firm throughout its existence, including earnings that have been retained in the business. MVA is the best external performance indicator as it indicates the market assessment of the effectiveness with which companies' managers have used the scarce resources under their control. Market value added refers to the value added to the shareholders wealth by the firm.

NEED FOR THE STUDY

The Information Technology (IT) sector is doing remarkably well and is registering high growth rates for the past few years. The software industry, which is a part of the IT industry has been the major driver of the IT industry and has been responsible for the phenomenal growth achieved by the IT industry. The exports are pioneering the software industry. Maximizing shareholder value is becoming the new corporate standard in India. The corporates, which gave low preference to the shareholder inquisitiveness are now bestowing the utmost inclination to it. In order to help the corporates to generate value to the shareholders, value-based management systems have been developed. If a business enterprise is determined to maximize the economic value of the shareholders claim to the assets, then it is quite beyond price to all those who are patronized stakeholders.

Creating value is the core principle on which the economic system is based. No enterprise survives or glows if it fails to generate wealth for the stakeholders. In the context of an impressive performance by the IT sector and realizing the significance of MVA, the researcher has made an attempt to study the Market Value Added performance in the Indian software industry.

RESEARCH OBJECTIVES

Value Added indicates the Net wealth created by the production of goods or services during a specified period in the corporate. An enterprise may exist without making profit but cannot survive without adding value. Indian markets are awakening to the reality that several companies are using capital incompetently and destroying value. Companies that add value to their enterprise often rank high when

it comes to Market capitalization. International markets also look at economic value when it comes to sizing up of a company. The main goal of the business enterprises is to protect and maximize the interest of shareholders by maximizing the overall goal of the business units. The main objective of the study is to compute MVA and to assess the relationship between MVA and select financial variables.

RESEARCH METHODOLOGY

SAMPLE SELECTION

The data used in this study relate to those software companies listed in the Bombay Stock Exchange (BSE) for which the data are available in the Capitaline database. The analysis is confined to the BSE listed Indian software companies only. This is due to the fact that BSE has the second largest number of domestic quoted companies on any stock exchange in the world after New York Stock Exchange (NYSE) and has more quoted companies than either the London or the Tokyo stock Exchange. Capitaline database contained data relating to 465 BSE listed software companies. Stratified sampling technique was used and hence the total population was sub-divided into three standard sub-groups namely Large (Turnover greater than Rs.900 Crores), Small-Medium (Turnover less than Rs.900 Crores) and Converts (diversified companies), in such a way that each strata was more homogeneous than the total population. Accordingly, it was found that there were 10 Large, 407 Small-Medium and 48 Converts. For selection of sample companies in each stratum, companies for which data were available for minimum of eight years were identified. The researcher selected all those companies from each stratum which fulfilled the above condition. Thus the final sample consisted of 102 software companies as detailed in the following table:

Composition of Sample Companies

No. of Years for which data were available	Sub Groups			Total
	Large	Small-Medium	Converts	
8	2	14	7	23
9	-	23	3	26
10	5	42	6	53
Total No. of Sample Companies	7	79	16	102

Further it could be observed that the total sample of 102 software companies fall into following trading groups in BSE: 16 'A' group companies, 5 'Z' group companies, 8 'S' group companies, 28 'T' group companies, 17 'B1' group companies, 22 'B2' group companies and 6 'TS' group companies.

PERIOD OF THE STUDY

The data collected for the study pertains to a period of ten years from 1996-97 to 2005-06.

SOURCES OF DATA

The study is based on the secondary data collected from the Capitaline and EBSCO databases. The data for the sample companies as obtained from Capitaline are supplemented with the information from various financial dailies, business magazines, reports, websites etc. Information regarding bank interest rates has been collected from 'The Indian Banker' (IBA Bulletin).

SELECTION OF VARIABLES

In the present study, a number of key financial variables have been identified for the purpose of analysis and they are: EVA, MVA, Turnover, NOPAT, ROS, ROTA, ROCE, EPS, Market Price and SVA. Computation of these variables has been made for a period of ten years.

MVA ANALYSIS

MVA is one of the external indicators which gives the utmost satisfaction to the investors. From the investors perspective, increase of the share price is always desirable. The most reliable measure of a management's long term success in adding value is known as "Market Value Added". MVA is the best internal performance indicator as it indicates the market assessment of the effectiveness with which companies managers have used the scarce resources under their control. Hence, it turns out to be very significant and important to analyze and identify the internal indicators that relate well with MVA.

It is evinced from Table 1.1 that among the biggies, in the last five out of the ten years of the study period, MVA has registered a positive trend. There have been some fluctuations during the first five years of the study period. It is observed from the figures of small-medium group of companies that a majority of 73 companies (92.47%) during the year 1998-99 have registered negative MVA. It tinkles that the book value of shares of these companies has been dominating over the market value.

Among the 16 converts companies selected for the study, 14 companies have registered a negative MVA during 1997-98, 1998-99, 2002-03 and 2003-04. The overall analysis implies that in most of the years of the study, wealth destruction has been found mainly in case of small-medium and converts group of companies. Further, it can be concluded that large group of companies show favourable wealth creation compared to the other two groups. MVA based Frequency Distribution of Sample Companies has been displayed for first five years and last five years in Table No.1.2 (a) and (b) respectively.

REGRESSION ANALYSIS

Multiple Regression Analysis has been carried out to explore the extent of relationship existed among dependent and independent variables incase of selected companies, and also to find out whether a particular independent variable emerges as the most explanatory variable. MVA is taken as the dependent variable and Market Price, ROS, ROCE, SVA, ROTA, EPS, Turnover and NOPAT are taken as the independent variables. The results witness the positive auto correlation as per the result of Durbin Waston model as depicted in Table No.1.3

It is evident from Table No.1.3 that the value of correlation co-efficients are coming down and that of the adjusted R-Square are going uptill the 5th model is reached wherein the estimated standard error is also minimum. This shows that Market Price, ROS, ROCE and SVA are the best determinants of MVA. The 6th and 7th models of regression disclose that both the coefficients of correlation and adjusted R-square have revealed the downward trend in their values. The Durbin-Watson model testifies the positive auto-correlation in the variables as the value is below two.

Table No.1.4 presents the results of ANOVA analysis. The F-statistics shows that the value of the residual is minimum in the 5th model. Table No. 1.5 is used to find the most explanatory independent variable or set of variables of MVA.

Tested with t-statistics, the Table No.1.5 brings out that ROCE is found significant if tested at 14.4 percent level whereas SVA and Market Price are observed quite significant even at 1 percent level of significance. The overall conclusion of Table No.1.3 to 1.5 throws light on three most important variables i.e., Market Price, ROCE and SVA where in ROCE stands third and Market Price is the best one.

CONCLUSION

An attempt has been made in this study to find out the whole sample wise and sub-group wise trends in the independent variables that affect MVA.

MVA Analysis shows that in most of the years under study, wealth reduction has been observed mainly in the case of small-medium and converts group of companies. Favourable wealth creation climate is noticed in case of large group of companies.

Multiple Regression analysis using backward method has been adopted in order to explore the extent of relationship between dependent and independent variables. The Durbin-Watson model exhibits positive auto-correlation among the variables. Three most important variables namely, Market Price, ROCE and SVA remained after the least predictors got eliminated. ROCE stands third and Market Price as per the overall analysis stands in high merit. This implies that wealth creation is strongly influenced by the market forces.

Finally it can be concluded that MVA, the best indicator of wealth is influenced by exogenous factors apart from the Market Price.

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Table No. 1.1

Market Value Added of the select Indian Software Companies

(1996-97 to 2005-06)

Groups	Name of the Company	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	Average
Large	DIGITALEQP	NA	NA	695.79	0.61	266.56	-203.17	-87.64	41.19	-163.1	122.53	84.10
	HP	124.33	219.97	1184.88	120.18	1978.74	-614.24	-228.23	114.9	-631.86	197.52	246.62
	I-FLEX	471.98	470.3	1656.65	72.3	3546.1	-895.17	-642.52	-233.57	NA	NA	555.76
	INFOSYS	6103.41	5507.72	11290.97	1299.01	2356.93	-4731.03	-1977.45	95.6	-573.16	89.31	1946.13
	SATYAM	2750.38	1809.33	4769.71	405.32	1379.25	-4128.83	-2835.4	240.76	-1148.03	124.12	336.66
	TECHM	398.83	131.52	732.81	210.83	573.31	-568.3	-375.77	43.06	-249.39	43.94	94.08
	WIPRO	4497.94	3718.36	7801.46	1030.85	3159.84	-3866.12	-1722.61	-450.72	-2460.95	461.04	1216.91
Small Medium	ABACUS	NA	NA	-4.48	-5.11	-5.61	-8.06	-8.25	-7.96	-12.85	-11.57	-7.99
	ABMANO	-7.46	-7.97	-2.68	-8.64	10.97	-19.01	-39.52	-9.38	6.82	NA	-8.54
	ACESOFT	-20.32	-18.3	-13.09	-18.49	1.32	-32.89	-27.81	-11.42	-21.76	-6.67	-16.94
	ADVENT	-11.41	-11.69	-24.81	-23.69	-25.02	-23.99	NA	-22.84	-16.14	-18.57	-19.80
	AFTEK LTD	71.11	114.09	257.85	-192.45	1528.17	-270.23	-160.8	-27.76	-37.8	-13	126.92
	ASIANCE	0.62	-7.32	-4.97	-7.06	-20.26	-10.11	-2.57	-5.81	NA	-8.18	-7.30
	AVANTELQ	-16.19	-14.75	-17.22	-18.78	-38.05	-63.48	-55.58	-11.12	NA	NA	-29.40
	AZTECH	20.35	14.49	-2.33	-33.86	284.16	-207.87	-48.19	-18.12	-14.95	NA	-0.70
	B2BSOFT	-6.36	-6.72	-17.17	-12.33	-27.67	9.63	11.79	-6.34	-7.84	0.72	-6.23
	BLUESTINFO	-37.89	-19.99	133.67	-11.11	292.17	-74.63	-83.06	-90.17	NA	NA	13.62
	BRELS	NA	-21.37	-17.48	-21.42	-21.06	-28.6	-49.51	-35.3	-84.1	-11.84	-32.30
	CALISOF	-51.7	-50.34	-47.14	-50.44	19.16	-69.86	-53.19	-33.1	-45.42	-19.74	-40.18
	CGVAK	-16.21	-16.32	-15.21	-15.84	6.3	-42.83	-21.81	-12.35	NA	NA	-16.78
	CONTECH	-8.1	-72.24	-30.17	-51.74	-24.42	-13.88	0.12	-133.68	-129.26	-117.48	-58.09
	CRANES	697.82	272.85	355.71	43.76	124.77	-26.45	-23.77	-16.86	-18.63	-14.75	139.45
	CRESSAN	33.4	24.75	-0.56	-8.72	-17.83	-11.94	-10.8	-10.8	NA	NA	-0.31
	CSSOFT	-16.3	-15.82	-10.72	-15.5	-60	-24.73	-21.98	NA	-27.78	NA	-24.10
CYBERTE	-11.4	-17.31	-62.03	-71	-340.87	-120.31	-430.64	-42.07	-285.58	18.42	-136.28	

DATASOFT	-0.97	-7.18	-6.84	-10.97	-22.12	-5.28	-15.63	-10.5	-10.43	-10.61	-10.05
DYNACON	3.5	3	9.67	2.44	-7.52	24.34	24.74	-177.69	-165.88	-166.02	-44.94
ESERVE	NA	NA	705.83	167.47	200.64	172.43	129.79	4.75	9.94	30.62	177.68
EUROSOFT	NA	-16.83	-16.79	-16.83	-3.79	-22.94	-38.27	-37.78	-50.41	0.56	-22.56
EZCOM	-10.61	-10.05	-12.27	-10.65	-9.94	-9.41	-5.92	-9.95	-9.72	-9.53	-9.81
FINTECH	119.88	5.44	97.38	-4.89	-239.32	-65.82	-10.32	-16.16	-21.64	-28.71	-16.42
FRONTINF	-90.52	NA	-66.75	NA	-90.78	25.97	17.19	-2.83	-2.06	-4.29	-26.76
GENESYS	-50.14	-54.19	-26.09	-22.43	20.09	1419.9	3411.96	-4.89	-9.62	-11.36	467.32
GEOMETRIC	23.91	-35.11	-23.14	-117.28	284.83	-144.26	-226.16	-60.13	-62.21	-14.98	-37.45
GOLDTECH	-11.15	-6.39	29.06	-1.75	-127.67	341.78	304.7	-6.08	60.84	31.78	61.51
GTL	NA	NA	-10262.74	-323	601.94	688.52	456.86	-492.7	206.94	682.36	-1055.23
HEXAWERE	NA	303.88	349.75	-13.15	34.57	-216.34	-1953.45	-6.9	818.83	2235.47	172.52
HINDTMT	-10.29	19.34	399.15	-47	2329.84	-350.2	-139.83	-49.52	-201.81	3.12	195.28
INFDS	-9.96	-2.25	-4.41	-2.29	-3.87	-19.48	NA	-7.18	-17.9	NA	-8.42
INFOTECENT	-57.67	-43.46	10.64	-51.74	322.26	-247.69	-168.27	-18.39	-48.57	-2.69	-30.56
INSOE	-4.62	-5.91	-5.75	-6.16	-11.45	-4.51	-7.65	-9.1	-8.88	-10.27	-7.43
INTELVIS	-13.34	-10.64	-8.82	-12.09	-11.12	-12.83	-7.88	-2.48	NA	-10	-9.91
INTRAINF	NA	-10.04	-10	-10.03	-9.21	-10	-10	-10	-10	-10	-9.92
ITMICRO	NA	NA	40.27	7.03	78.58	-220.89	-10.85	-8.99	-1.59	-9.95	-15.80
JETKINGQ	-1.89	-5.37	-12.52	-26.18	4.81	36.17	-3.01	-5.08	-5.4	-2.72	-2.12
JINDONL	NA	NA	-2.48	-1.8	-18.14	8.64	-1.35	-11.2	-3.79	-8.74	-4.86
KASHYAP	-1.29	-10.84	-2.49	-1.82	-18.04	7.28	-1.83	-11.22	-4.44	NA	-4.97
KEDIN	NA	-3.4	-8.59	-5.58	-0.36	-5.64	-5.48	-10	-10	-10	-6.56
KLG	-39.01	-99.76	-75.34	-98.29	-43.03	NA	-129.15	-97.44	-47.97	-21.78	-72.42
KPITCUMM	87.11	57.27	98.26	-35.07	-9.59	759.98	-297.46	-28.44	99.51	-6.49	72.51
LEENEE	-12.16	14.04	-5.46	-16.55	NA	NA	118.19	-7.06	-12.12	-11.46	7.49
MARRSOF	-1.69	-11.76	3.71	-19.96	71.82	NA	-192.36	-27.77	-155.87	10.85	-35.89
MAGNUM	NA	-13.1	-12.73	-13.1	-7.73	-8.27	-20.49	-11.37	-3	-11.23	-11.22
MANGASOF	-11.24	-11.04	-12.44	-11.93	-11.71	-11.85	-9.79	-10.01	-10.18	-12.74	-11.29
MASTEK	47.44	1.41	11.27	-35.37	824.6	-139.35	-270.49	-82.1	-128.92	48.87	27.74

MELSTAR	-7.28	-37.27	5.08	-17.79	5.45	-303.74	-1903.61	-4.6	12.65	-11.54	-226.27
MICROTECH	-82.33	-58.13	-60.87	-76.6	379	-84.28	-58.62	-56.64	-4.63	-9.99	-11.31
MIDPOINT	-2.42	-3.12	-3.48	-3.41	-7.27	-2.39	-4.23	-6.1	-4.02	-12.5	-4.89
MINDTEK	-12.54	-16.62	-25.9	-24.09	-5.21	-71.78	2.17	-5.82	-14.8	-17.05	-19.16
MPHASIS	111.97	25.79	568.56	-471.28	1538.26	-607.66	-65.55	-22.8	-259.62	0.87	81.85
NCCFIN	1.61	2.05	18.46	2.88	-7.98	-10.08	-17.27	-5.38	10.37	7.01	0.17
NUCLEUSSOFT	21.3	0.7	9.47	-59.5	160.2	-162.96	-51.87	-40.75	-40.89	-37.57	-20.19
ODYSSEY	-3.89	-4.08	-24.37	-7.82	-107.52	-16.2	-2.29	-5.17	-3.81	-9.93	-18.51

ONWARD	-32.11	-32.39	-7.96	-36.18	22.2	-188.82	-141.64	-17.92	-194.37	-23.56	-65.28
ORIENTINFO	-55.92	-46.51	-28.57	-90.25	-573.06	-194.51	-108.29	-14.93	-42.61	-3.96	-115.86
OTCO	NA	-18.14	-16.45	-14.34	-12.26	-19.48	-15.59	-11.55	-11.55	-10.86	-14.47
PALSOFT	NA	2.01	1.84	2.16	-13.47	-8.63	-10.86	-9.75	-13.88	-63.77	-12.71
PENTASOFTTE	-10.04	2.4	50.11	-138.93	876.84	-1929.54	-1185.06	-50.94	3442.92	13.03	107.08
PIOTECH	-9.47	-9.49	-9.49	-9.65	-10.09	-10.13	-21.1	-10.59	-15	-11.25	-11.63
PSI	18.8	6.58	-113.14	-108.88	-198.69	NA	-430.89	5.46	259.14	12.16	-61.05
RAMINFO	-191.02	-252.57	-405.38	-319.02	-362.87	-403.85	-454.08	-10	NA	NA	-299.85
RAMCOSYS	-49.21	-69.18	-113.47	-80.49	-96.48	-39.21	29.03	-8.15	-0.86	-7.97	-43.60
ROLTA	210.29	268.5	843.56	199.39	NA	-1463.59	-1006.68	109.86	-621.16	179.52	-142.26
SANRASOF	-9.03	NA	-0.41	-9.39	-30.35	-9.93	-10.4	-11	-44.92	-6.94	-14.71
SILVERLINE	118.95	-27.4	456.03	356.04	1278.85	-548.87	-312.65	38.52	-718.96	73.41	71.39
SINDUVA	NA	-1	-2.71	-2.71	-2.71	-0.86	-1	-1.54	-10.14	-10.14	-3.65
SOFTSOL	-50.66	-61.04	-55.54	-48.53	19.09	-601.43	-359.1	-86.94	-313.46	-4.36	-156.20
SONATA	6.82	26.27	78.58	11.22	553.75	-188.2	-179.54	-21.25	-915.69	-5.48	-63.35
SVAMSOFT	NA	-8.9	-92.98	-13.86	-13.79	-14.85	-21.06	-14.19	-18.72	-12.31	-23.41
TELEDATA	275.91	155.81	15.05	NA	263.76	-40.95	-61.97	-22.84	-61.49	-12.65	56.74
TERASOFT	11.89	1.92	9.8	-10.34	-2.45	-18.5	-11.05	-11.85	-12.67	-11.25	-5.45
TWINSOFT	-12.31	-28.31	-23.03	-23.87	-26.92	25.48	72.47	6.3	25.55	-5.67	0.97
VIRTUALS	NA	2.72	-82.17	-28.12	-44.76	-16.09	-13.9	-24.57	-6.38	-8.32	-24.62
VISUALSOFT	-89.26	-55.69	184.34	-50.74	697.5	-413.71	-290.8	-13.39	-33.81	-8.35	-7.39

	VJIL	-30.59	-29.92	-21.39	-29.72	-12.65	-62.8	-50.85	-12.09	-43.96	-8.15	-30.21
	ZENSAR	0.88	45.58	82.06	-20.82	407.34	-108.35	-18.47	-8.41	253.19	63.61	69.66
Convert	CHOKSHIN	-5.02	-5.53	-6.15	-6.18	-6.43	-26.99	-6.82	-9.46	-15.4	-11.43	-9.94
	CORCOMP	NA	94.01	80.33	72.39	17.45	100.71	NA	-10.5	-10.5	-10.5	41.67
	DANLAW	-82.07	-84.77	-89.78	-92.66	-132.15	-127.07	-102.43	-10.11	NA	NA	-90.13
	ENCORE	-1852.97	-34.21	-31.58	-16.34	-103.71	-46.22	-70.77	-10.2	-10	NA	-241.78
	ICSAIND	-3.63	-7.62	-7.68	-10.43	-8.91	-16.68	-11.4	-8.68	-7.63	-11.46	-9.41
	IECSOF	-75.91	-28.93	-150.84	-48.25	-0.97	35.97	12.89	-4.9	-4.34	-7.75	-27.30
	INFOTREK	-12.31	-12.66	-11.12	-2.46	-0.69	-4.2	-10.57	-10.93	-13.8	-7.84	-8.66
	LCCINFO	-7.56	-48.67	-103.52	-42.23	-33.58	-579.36	-763.12	-11.51	NA	NA	-198.69
	MASCONGLO	67.83	105.31	-23.48	-378.47	385.45	NA	-734	-42.27	-18.3	NA	-70.88
	MILLENCY	NA	NA	-9.77	-9.84	-10.36	-10.67	-8.09	-9.53	-9.2	-10.32	-9.72
	NETVISTA	NA	-103.04	18.94	1.86	58.21	NA	1744.27	-7.81	-7.94	-10.01	211.81
	OMEGAIN	NA	-17.65	-25.13	-70.26	-28.16	-24.64	45.8	-8.29	-9.68	-9.87	-16.43
	SRGINFO	NA	-794.36	-39.93	-16.15	-17.39	NA	-746.79	236.7	-1265.88	5.8	-329.75
	SYNLOG	-16.89	-23.47	-24.18	-15.47	5.1	-67.3	-29.64	1.66	-26.44	3.93	-19.27
TRILLENT	NA	NA	-6.23	-4.83	-14.48	-17.71	-9	-861.77	-11.8	-7.92	-93.37	
VAKRANG	-38.75	-51.34	-46.08	-62.66	-51.81	-45.01	-90.18	-17.65	-20.41	-113.03	-53.69	

Table No. 1.2 (a)

MVA Based Frequency Distribution of Sample Companies

(1996-97 to 2000-01)

MVA	No. of Companies									
	2000-01	%	1999-00	%	1998-99	%	1997-98	%	1996-97	%
Negative	81	79.41	84	82.35	89	87.25	80	78.43	62	60.78
Upto Rs.1000 Cr	20	19.61	16	15.69	13	12.75	21	20.59	39	38.24
Rs.1000 to Rs.2000 Cr	1	0.98	1	0.98	0	0.00	0	0.00	0	0.00

Rs.2000 to Rs.5000 Cr	0	0.00	1	0.98	0	0.00	1	0.98	1	0.98
Above Rs.5000 Cr	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	102	100.00	102	100.00	102	100.00	102	100.00	102	100.00

Table No.1.2 (b)

MVA Based Frequency Distribution of Sample Companies

(2001-02 to 2005-06)

MVA	No. of Companies									
	2005-06	%	2004-05	%	2003-04	%	2002-03	%	2001-02	%
Negative	52	50.98	61	59.80	66	64.71	82	80.39	58	56.86
Upto Rs.1000 Cr	47	46.08	38	37.25	31	30.39	18	17.65	35	34.31
Rs.1000 to Rs.2000 Cr	0	0.00	1	0.98	2	1.96	2	1.96	5	4.90
Rs.2000 to Rs.5000 Cr	2	1.96	1	0.98	1	0.98	0	0.00	4	3.92
Above Rs.5000 Cr	1	0.98	1	0.98	2	1.96	0	0.00	0	0.00
	102	100.00	102	100.00	102	100.00	102	100.00	102	100.00

Table No. 1.3

MVA and other independent variables (Average): Durbin – Watson

Analysis for the Whole Sample - Model Summary (h)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.868(a)	.754	.732	143.460	1.832
2	.868(b)	.754	.735	142.701	
3	.868(c)	.753	.737	142.118	

4	.866(d)	.750	.737	142.334	
5	.865(e)	.748	.738	142.083	
6	.863(f)	.745	.737	142.117	
7	.861(g)	.741	.736	142.506	

- a. Predictors: (Constant), Market Price, ROS, ROCE, SVA, ROTA, EPS, Turnover, NOPAT
- b. Predictors: (Constant), Market Price, ROS, ROCE, SVA, EPS, Turnover, NOPAT
- c. Predictors: (Constant), Market Price, ROS, ROCE, SVA, Turnover, NOPAT
- d. Predictors: (Constant), Market Price, ROS, ROCE, SVA, NOPAT
- e. Predictors: (Constant), Market Price, ROS, ROCE, SVA
- f. Predictors: (Constant), Market Price, ROCE, SVA
- g. Predictors: (Constant), Market Price, SVA
- h. Dependent Variable: MVA

Table No.1.4

MVA and other independent variables (Average): ANOVA (h)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5853995.135	8	731749.392	35.555	.000(a)
	Residual	1914002.319	93	20580.670		
	Total	7767997.454	101			
2	Regression	5853817.773	7	836259.682	41.066	.000(b)
	Residual	1914179.681	94	20363.614		
	Total	7767997.454	101			
3	Regression	5849235.610	6	974872.602	48.267	.000(c)
	Residual	1918761.844	95	20197.493		

	Total	7767997.454	101			
4	Regression	5823136.889	5	1164627.378	57.487	.000(d)
	Residual	1944860.565	96	20258.964		
	Total	7767997.454	101			
5	Regression	5809797.703	4	1452449.426	71.948	.000(e)
	Residual	1958199.751	97	20187.626		
	Total	7767997.454	101			
6	Regression	5788666.468	3	1929555.489	95.536	.000(f)
	Residual	1979330.986	98	20197.255		
	Total	7767997.454	101			
7	Regression	5757510.548	2	2878755.274	141.755	.000(g)
	Residual	2010486.906	99	20307.949		
	Total	7767997.454	101			

a. Predictors: (Constant), Market Price, ROS, ROCE, SVA, ROTA, EPS, Turnover, NOPAT

b. Predictors: (Constant), Market Price, ROS, ROCE, SVA, EPS, Turnover, NOPAT

c. Predictors: (Constant), Market Price, ROS, ROCE, SVA, Turnover, NOPAT

d. Predictors: (Constant), Market Price, ROS, ROCE, SVA, NOPAT

e. Predictors: (Constant), Market Price, ROS, ROCE, SVA

f. Predictors: (Constant), Market Price, ROCE, SVA

g. Predictors: (Constant), Market Price, SVA

h. Dependent Variable: MVA

Table No.1.5

MVA and other independent variables (Average): Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-30.305	19.348		-1.566	.121
	Turnover	-.126	.118	-.236	-1.065	.290
	SVA	.217	.040	.566	5.483	.000
	EPS	-1.060	2.553	-.044	-.415	.679
	ROCE	-.648	.708	-.077	-.915	.362
	NOPAT	.728	.561	.355	1.299	.197
	ROS	5.410	4.734	.073	1.143	.256
	ROTA	-11.620	125.171	-.010	-.093	.926
	Market Price	.156	.074	.274	2.107	.038
2	(Constant)	-30.370	19.233		-1.579	.118
	Turnover	-.129	.111	-.242	-1.160	.249
	SVA	.217	.039	.566	5.512	.000
	EPS	-1.138	2.399	-.047	-.474	.636
	ROCE	-.696	.480	-.083	-1.452	.150
	NOPAT	.747	.519	.364	1.440	.153
	ROS	5.192	4.093	.070	1.269	.208
	Market Price	.156	.073	.273	2.122	.036
	3	(Constant)	-34.434	17.149		-2.008
Turnover		-.126	.111	-.236	-1.137	.259
SVA		.217	.039	.567	5.551	.000
ROCE		-.752	.463	-.089	-1.624	.108
NOPAT		.710	.511	.346	1.390	.168

	ROS	4.924	4.037	.066	1.220	.226
	Market Price	.140	.065	.245	2.149	.034
4	(Constant)	-41.412	16.038		-2.582	.011
	SVA	.201	.036	.524	5.517	.000
	ROCE	-.712	.462	-.084	-1.540	.127
	NOPAT	.205	.253	.100	.811	.419
	ROS	4.427	4.020	.059	1.101	.273
	Market Price	.178	.056	.313	3.205	.002
5	(Constant)	-43.110	15.872		-2.716	.008
	SVA	.219	.029	.571	7.638	.000
	ROCE	-.678	.460	-.080	-1.475	.144
	ROS	4.082	3.990	.055	1.023	.309
	Market Price	.207	.043	.363	4.810	.000
6	(Constant)	-47.586	15.261		-3.118	.002
	SVA	.218	.029	.570	7.628	.000
	ROCE	-.549	.442	-.065	-1.242	.217
	Market Price	.210	.043	.368	4.882	.000
7	(Constant)	-45.853	15.239		-3.009	.003
	SVA	.217	.029	.566	7.557	.000
	Market Price	.203	.043	.356	4.751	.000

a. Dependent Variable: MVA

REQUEST FOR FEEDBACK

Esteemed & Most Respected Reader,

At the very outset, International Journal of Research in Commerce and Management (IJRCM) appreciates your efforts in showing interest in our present issue under your kind perusal.

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Hoping an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Editor