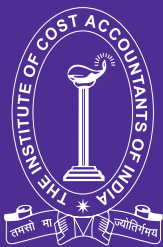# RESEARCH BULLETIN

The Institute of Cost Accountants of India

(Statutory body under an Act of Parliament)

Volume 41• No.II• July2015

www.icmai.in

Mission Statement

The CMA professionals would ethically drive enterprise globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting.

Vision Statement

The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally.

RESEARCH BULLETIN

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Foreword

It is my pleasure to write the foreword for the Research Bulletin, Volume-41, No. II of The Institute of Cost Accountants of India. I believe this volume will undeniably enrich the thought process of the readers and potential researchers.

Financial inclusion is a pioneering concept which makes alternative techniques to promote the banking habits of the people. Comprehensive growth and sustainability emphasizes on productive employment rather than on income redeployment. Financial inclusion is a part of inclusive growth as it accentuates on delivering financial services at much inexpensive costs to the deprived sections of the society. Again, sustainability in essence is an exercise that measures the value that a business creates by leveraging strategy, organizational structure and governance in social, economic and environmental context. The CMAs through their professional expertise can apply suitable strategies for unhindered access to the financial services like Savings, Credit, Micro insurance and remittance facilities in favour of the small and marginal farmers and landless labourers.

The bulletin comprises of in-depth researched topics on a variety of segments of the Indian Economy. I hope the readers would love to go through them.

I hope the research articles presented in this volume will address diverse issues and confrontations of our economy and throw some light towards its effective solutions.

CMA (Dr.) A. S. Durga Prasad
President
The Institute of Cost Accountants of India

Chairman's Communiqué

It gives me an immense pleasure to place before you the Research Bulletin, Vol.41, No.II, July issue of the Institute. Our Research Bulletin mainly emphasizes on pragmatic research articles and has a much wider audience of academics, researchers, industry professionals and practitioners.

Research is a well thought-out inquest that probes hypotheses, recommends new interpretations of data or texts, and poses new questions for future research to explore. In practice, research methods diverge widely, depending upon the academic discipline's established standards, the individual researcher's inclination, or a particular requisite relevant to the study. Research is not a solitary activity –but an act of community. Research is an ongoing, collaborative process with no finish line in sight.

I take this opportunity to put on record my appreciations for my fellow members of the Research, Innovation and Journal Committee, esteemed members of the Review Board, the eminent contributors and the entire research team of the Institute for their sincere effort to publish this volume in time.

The present volume of the Research Bulletin contains varied issues of interest namely, like Quality Circle, Performance Management, Regional Rural Banks, IPOs, Intellectual Capital, Financial Inclusion and Sustainable Development.

I welcome the readers to put forward their valuable feedback to enrich Research Bulletin further. Suggestions for improvement of this Bulletin shall be highly appreciated.

CMA Manas Kumar Thakur
Chairman, Research, Innovation & Journal Committee
The Institute of Cost Accountants of India

Editor's Note

Greetings!

It is our pleasure to launch the current volume of the *Research Bulletin, Vol.41 No.II, July, 2015* issue, an offering of the *Directorate of Research & Journal* of *the* Institute. We publish both theme based and non theme based articles on the contemporary issues. Inputs are mainly received both from academicians and the corporate stalwarts. Empirical research constitutes the moral fiber of the socio-economic activities. Thus our endeavour is to draw attention to the vitality in environmental, social, economical and market-related issues, so that the society can explore the surroundings, become accustomed to the change in an effective manner and can take decisions deliberately.

We look forward to constructive feedback from our readers on the articles and overall development of the Research Bulletin. Please send your mails at *research.bulletin@icmai.in*. We thank all the contributors and reviewers of this important issue and hope our readers enjoy the articles.

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Contents

Composite Analysis: A Study of Regional Rural Banks of Gujarat State for Post-Merger Period

Rajesh P Khatri

Abstract

Rural credit is a small amount of money which gives to the poor peoples including small scale farmers and unemployed person as loan to start their own work by development banks or any other financial institutions. Till Independence in India, the credit requirements of rural households were mainly met from the non-institutional sources, as the banking and cooperative movement were in the nascent stages. The rural households, both cultivators and non-cultivators, require credit for the productive and nonproductive purposes. Even now the purposes remain the same. At present, the productive purposes of cultivators include loans both working capital and fixed capital. Working capital is used to buy seeds, fertilizers, pesti-cides, etc., and to pay taxes to the government, etc. Fixed capital is meant for permanent improvements on land, digging and deepening of wells, fencing of land, and for purchasing implements and machinery, etc. Non-cultivators also use loans for creation of income generating assets in the sense of formation of fixed capital and for circulating capital in the sense of working capital. The unproductive purposes are the same for both the cultivators and non-cultivators. In this paper an attempt is made to highlight the performance of RRBs for the period of 2006 to 2012 by using composite ratios which indicates the performance of RRBs in different parameters like deposits, advances, average working fund, operating expenses, other incomes and etc. which indicates the efficiency of bank for that particular parameters which is considered as composite ratio analysis, For each parameter, the different ratios are find out and average ratios are calculated. On the basis of the average ratios, the best performer bank is ascertained.

Key Words

Regional Rural Banks, Composite Ratio.

Introduction

Regional Rural Banks in India are an elemental part of the rural credit structure of the country. The aim of Rural Banks is to contribute banking services for upliftment of rural people as well as to make strong development of the rural economy of India. Till Independence in India, the credit requirements of rural households were mainly met from the

non-institutional sources, as the banking and cooperative movement were in the nascent stages. The rural house-holds, both cultivators and non-cultivators, require credit for the productive and nonproductive purposes. Even now the purposes remain the same. At present, the productive purposes of cultivators include loans both working capital and fixed capital. Working capital is used to buy seeds, fertilizers, pesticides, etc., and to pay taxes to the government, etc. Fixed capital is meant for permanent improvements on land, digging and deepening of wells, fencing of land, and for purchasing implements and machinery, etc. Non-cultivators also use loans for creation of income generating assets in the sense of formation of fixed capital and for circulating capital in the sense of working capital. The unproductive purposes are the same for both the cultivators and non-cultivators.

Evolution of RRBs

The establishment of Regional Rural Banks (RRBs) has been a landmark in the history of rural banking. Till 1968, the official policy was in favor of developing cooperative credit system. In 1969, All India Rural Credit Review Committee found that over large parts of the country small farmers had been lacking access to cooperative credit. Further, the quantum of credit from the cooperative system was too little to meet the credit requirements of agriculture. In 1969 a major effort was made to improve rural credit delivery system through nationalization of 14 commercial banks which emphasized on opening of rural branches. But rural branches of commercial banks (CBs) proved to be a source of channelizing savings from rural areas to urban areas. They also lacked trained personnel to handle rural issues and acted more as a competitor to the cooperative credit system rather than supplementing it. As CBs worked more for profit earning, they failed to include the disadvantaged sections of the society in their banking domain.

Thus keeping these shortcomings in view, Banking Commission 1972 recommended that a chain of rural banks be set up in addition to the regular branches of commercial banks. A Working Group was set up under the chairmanship of Mr. M. Narasimham to give suggestions to improve the rural credit delivery system. The Group suggested institution of Regional Rural Banks as a means to provide low cost credit to rural artisans, landless labourers and small and marginal farmers. The 20 point programme of the Government also envisaged making credit available to weaker sections of the society. Thus the Regional Rural Banks ordinance was promulgated by the president on 26th September, 1975 which came into force with immediate effect. On October 2, 1975 five RRBs were set up at Morada-bad and Gorakhpur in Uttar Pradesh, Bhiwani in Haryana, Jaipur in Rajasthan and Malda in West Bengal. The first five Regional Rural Banks are as follows:

1. Prathama Bank and Gorakhpur Kshetriya Gramin Bank in Uttar Pradesh

2. Haryana Krishi Gramin Bank in Haryana

3. GourGramin Bank in West Bengal

4. Jaipur-Nagpur Anchalik Gramin

Bank, Rajasthan.

These banks were sponsored by the Syndicate Bank, State Bank of India, Punjab National Bank, United Commercial Bank and United Bank of India. The Ordinance of 1975 was replaced by the Regional Rural bank Act 1976. RRBs were expected to play a vital role in mobilizing the savings of the small and marginal farmers, artisans, agricultural labourers and small entrepreneurs and inculcate banking habit among the rural people. These institutions were also expected to plug the gap created in extending the credit to rural areas by largely urban-oriented commercial banks and the rural cooperatives, which have close contact with rural areas but fall short in terms of funds. The RRBs mobilize financial resources from rural/semi-urban areas and grant loans and advances mostly to small and marginal farmers, agricultural laborers and rural artisans. For the purpose of classification of bank branches, the Reserve bank of India defines rural area as a place with a population of less than 10,000. RRBs are jointly owned by Government of India, the concerned State Government and Sponsor Banks; the issued capital of a RRB is shared by the owners in the proportion of 50%, 15% and 35% respectively.

Reform & Merger Process

In the wake of introduction of financial sector reforms in 1991-92, the commercial viability of RRBs emerged as the most crucial factor in deciding about their desired role due to their limited business flexibility with hardly any scope of expansion/diversification, smaller size of loans with higher exposure to risk-prone advances and professional efficiency in financial deployment. To strengthen RRBs and improve their performance many initiatives have been taken by the Government of India and the Reserve Bank of India (RBI). As part of the comprehensive restructuring programme, recapitalization of RRBs was initiated in the year 1994-95. The process continued till 1990-00 and covered 187 RRBs with aggregate financial support of Rs.2188.44 crore from the shareholders, viz., Government of India, State Governments and sponsor Banks in the ratio of 50:15:35. Further, the branch licensing policy for RRBs has been liberalized. Under the new norms, empowered committees at the regional offices of RBI clear RRBs application to open new branches. The branches of RRBs may undertake government business including conducting foreign exchange business with the prior approval of the concerned Government authority and RBI. These banks have also been allowed to open extension counters at the premises of the institutions of which they are principal bankers after obtaining license from the concerned regional office of the RBI. The RRBs need not obtain permission of RBI for the installation of ATMs at the branches and extension counters for which they hold licenses issued by RBI. They are also permitted to open off-site ATMs after assessing the cost and benefit. As against the earlier policy of opening a large number of branches in far flung rural areas, RRBs have been permitted to merge/close down their unviable branches and the branch licensing policy for RRBs is almost at par with that for commercial banks. Now RRBs compete with the commercial banks in rural credit market of India. RRBs give loans for agriculture and rural

development while commercial banks also serve needs of commerce and industry in rural areas. In 2005-06, the Government of India initiated the process of structural consolidation of RRBs by amalgamating RRBs sponsored by the same bank within a State as per the recommendations of the Vyas Committee (2004). The amalgamated RRBs were expected to provide better customer service due to better infra-structure, computerization of branches, pooling of experienced work force, common publicity, marketing efforts etc., and also derive the benefits of a large area of operation, enhanced credit exposure limits and more diverse banking activities.

Objectives of RRBs

The RBBs Act has made various provi-sions regarding the incorporation, regulation and working of RRBs. According to this Act, the RRBs are to be set-up mainly with a view to develop rural economy by providing credit facilities for the purpose of develop-ment of agriculture, trade, commerce, industry and other productive activities in the rural areas.

Such facility is provided particularly to the small and marginal farmers, agricul-tural labourers, artisans, and small entrepreneurs and for other related matters.

The objectives of RRBs can be summa-rized as follows:

1. To provide cheap and liberal credit facilities to small and marginal farmers, agriculture labourers, artisans, small entrepreneurs and other weaker sections.

2. To save the rural poor from the moneylenders.

3. To act as a catalyst element and thereby accelerate the economic growth in the particular region.

4. To cultivate the banking habits among the rural people and mobilize savings for the economic development of rural areas.

5. To increase employment opportuni-ties by encouraging trade and commerce in rural areas.

6. To encourage entrepreneurship in rural areas.

7. To cater to the needs of the back-ward areas which are not covered by the other efforts of the Government?

8. To develop underdeveloped regions and thereby strive to remove economic disparity between regions.

Each RRB will operate within the local limits specified by notification. If neces-sary, a RRB will also establish branches or agencies at places notified by the Government. Each RRB is sponsored by a public sector bank, which provides assistance in several ways, viz., subscrip-tion to its share capital, provision of such managerial and financial assistance as may be mutually agreed upon and helps the recruitment and training of personnel during the initial period of its

Outline of RRBs of Gujarat State

List of Amalgamated RRBs of Gujarat State (As on 31 August 2006)

No.	Sponsor Bank	Name of New RRB	Name of Amalgamated RRBs
1	Bank of Baroda	Baroda Gujarat GB	Panchmahal Vadodara GB
			Surat Bharuch GB
			Valsad Dangs GB
2	Dena Bank	Dena Gujarat GB	Banaskantha Mehsana GB
			Kutch GB
			Sabarkantha Gandhinagar GB
3	State Bank of India	Saurashtra GB	Jamnagar Rajkot GB
			Junagadh Amreli GB
			Surendranagar Bhavnagar GB

Chart: 1. Numbers of Districts Covered by RRBs of Gujarat State
(As on 31/03/2012)
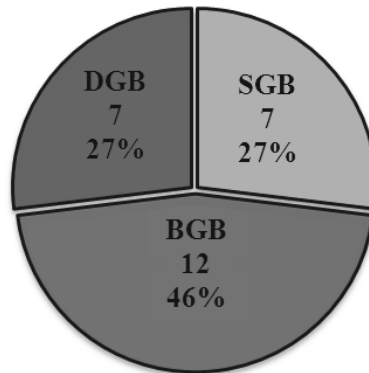
functioning.

Above chart shows that RRBs of Gujarat State covered 26 districts of which DGB has covered 7 districts which was 27% of total districts, SGB has covered 7 districts which was 27% of total districts while BGB has covered 12 districts which has covered 46% of the total districts of Gujarat State.

Chart: 2 Number of Branches covered by RRBs of Gujarat State (As on 31/03/2012)
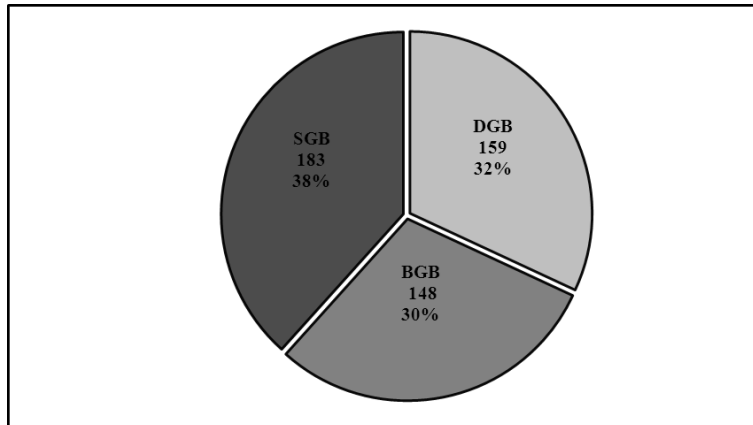
In compliance with the above chart it was revealed that at the end of March 2012, the number of branches of RRBs of Gujarat state come to 490. DGB has covered 159 branches of the total branches which is 32% of the total branches. BGB has covered 148 branches of the total branches which is 30% of the total branches. SGB has covered 183 branches of the total branches which is 38% of the total branches. It was further noticed that in spite of SGB has covered 7 districts, it has more branches in comparison of other two banks.

Chart: 3 Population covered by RRBs of Gujarat State (As on 31/03/2012)
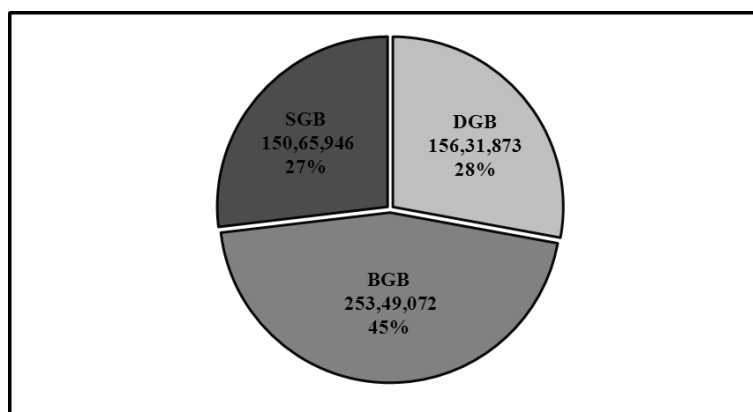
Pursuant to the above chart it was examined that of the total population of Gujarat State, SGB has covered 27% of the total population, DGB has covered 28% of the total population and BGB has covered 45% of the total population. It was noticed that majority of the population was covered by BGB.

Literature Review

The literature available in the working and performance of RRBs in India is limited. The literature obtained by investigators in the form of reports of various committees, commissions and working groups established by the Union Government, NABARD and Reserve Bank of India, the research studies, articles of researchers, bank officials, economists and the comments of economic analysts and news is briefly reviewed have been stated below.

Hazari, (1976), through his article made an attempt to study the participation of Regional Rural Banks in rural development by introducing the concept of command area development. He stated that for the integrated development of a region, it is necessary to channelize the amenities to the groups of farmers instead of solely depending on individual farmer.

The Working Group on Multi Agency Approach in Agricultural Finance, (1978), under the chairmanship of C.E. Kamath has made some relevant observations on the role of the RRBs. According to them, the role of the RRBs is to supplement and not to supplant the other institutional agencies in the field of rural credit. It further recommended that the RRBs in their direct loaning should not enter in to competition with the co-operatives. The Kamath group clearly preferred the RRBs to the commercial banks for the future expansion of banking in rural areas. It also favored the idea of allowing the RRBs to allocate a part of their total loans to the large and medium farmers.

The Committee set up by the Reserve Bank of India in (1977), to review the working of regional rural banks for evaluation of the performance of the RRBs in the lights of objectives for which they were set up, indication of their precise role on the rural credit structure and making recommendations with regard to the scope, methods and procedures of their functioning. The committee came to the conclusion that within a short span of two years, they have demonstrated their capability to serve the purpose for which they were established. Therefore, the program for the establishment of more regional rural banks deserves to be accelerated. The committee on regional rural banks constituted by the reserve bank of India conducted a study on the viability of regional rural banks (1979). It revealed that it was not possible for all branches to become viable because some branches were located at centers where the potential had been limited. Some branches could not expand their business because of keen competition from branches of commercial and co-operative banks.

The Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development (CRAFICARD), (1982), examined the role of regional rural banks in the rural credit system and recommended that, as regional rural banks were more suitable for rural development work, preference should be given to regional rural banks in

regard to licensing of branches in the rural areas. The committee also recommended that regional rural banks should continue to confine their operations to the weaker sections.

In 1986, NABARD published "A Study on RRBs Viability", which was conducted by Agriculture Finance Corporation in 1986 on behalf of NABARD. The study revealed that viability of RRBs was essentially dependent upon the fund management strategy, margin between resources mobility and their deployment and on the control exercised on current and future costs with advances. The proportion of the establishment costs to total cost and expansion of branches were the critical factors, which affected their viability. The study further concluded that RRBs incurred losses due to defects in their systems as such, there was need to rectify these and make them viable. The main suggestions of the study included improvement in the infrastructure facilities and opening of branches by commercial banks in such areas where RRBs were already in function.

Nagi Uddin, (2003), has tried to study in depth the working and performance of RRBs in the state of Uttaranchal. The important aspects of the working of these banks such as branch expansion, deposit mobilization, profitability etc. has been analyzed in detail. He has also made an attempt to study the impact of RRBs on the rural economy of the state through some selected parameters and the internal and external constraints which were responsible for growth of the banks.

Report on Asian Development Bank on RRBs, (2003), found some key issues i.e,

misalignment of ownership and management, risk aversion and mission drift, high cost operations, inadequate loan loss provisioning, low capital adequacy, low profitability, high accumulated losses, competition with sponsored banks and for that RRBs need for capacity building. RRBs have high cost resources with inadequate training, low productivity and insufficient systems and technology support. These issues will need to be addressed on priority if RRBs are to be revitalized.

Report of the Internal Working Group on RRBs, (2004), concluded that international experience of restructuring rural financial institutions indicate that only viable financial institutions with sustainable financial services can increase their outreach. The issue of viability is thus not only of relevance to the health and survival of the institutions but to the poor themselves. Accordingly, since repositioning of RRBs in Indian financial system would warrant major initiatives to be taken to improve their financial viability and sustainability, the suggestions above reflect the same. International experience of various countries with regard to this segment is being looked into, for identifying new ideas / methods, which could be employed in the Indian context with suitable modifications. However, resolving human resource issues would be the key to such an exercise.

M. Syed Ibrahim, (2011), in his article about "Role of Indian Regional Rural banks in the priority sector lending - An Analysis" found that the real growth of Indian economy lies on the emancipation of rural masses from poverty, unemployment and other socio-economic backwardness. Keeping this end in view, Regional Rural Banks were

established by the Government of India to develop the rural economy. He stated that "With the passage of three decades, the RRBs are now looked upon with hope for rejuvenating the rural India". In the study, the role of RRBs in the rural credits structure was deeply analyzed. The finding may be considerable use to rural banking institutions and policy makers in developing and shaping the appropriate credit structure as RRBs are integral part of the rural credit structure in India.

Objectives of the study

1. To evaluate the performance of RRBs of Gujarat State for the post-merger period i.e., 2006 to 2012.

2. To judge the best performer bank by using Composite Ratio Model applying the ratios which are excluded in CAMEL Model.

3. To give workable suggestions.

Limitations of the study

The following are the limitations of the present study.

1. Only those ratios which are excluded from CAMEL model have been used in this model.

2. It is an attempt to evaluate the performance on the ratios of composite model which may not sufficient. Some other ratios can also be applied.

3. The ratios calculated from the annual reports of the bank which is secondary data and the limitations of secondary data is also applied to this study.

4. For evaluation of performance, statistical tool "average" of the ratios for the study period is taken as base, hence the limitations of average is also applied.

5. This study is limited to seven years after post-merger period i.e. 2006 to 2012.

Composite Ratio Model

Generally, for the performance evaluation of banks, CAMEL Model is used which comprise of Capital Adequacy Ratios, Asset Quality Ratios, Management Efficiency Ratios, Earning Capability Ratios and Liquidity Ratios. In the present study, Composite Ratios have been used which emphasis on the ratios which are not included in CAMEL Model. The ratios left in CAMEL Model for Deposits, Advances, Investments, Borrowings, Average Working Fund, Expenses and Income are included in this model. This model can be used as tool for performance evaluation because only CAMEL Model is not sufficient having a limitation of leaving the ratios which are used in composite model.

In the present study following composite ratios are calculated, analyzed and interpreted with reference to regional rural banks of Gujarat State for post-merger period 2006 to 2012. The ratios are classified in to eight parameters to highlight the performance of that particular parameter. For performance evaluation of the related parameter, the average ratio of the study period has taken as base. On the basis of the average ratios, the ranks were assigned to the bank. To make overall analysis of

the parameter, the rank based performance analysis table and rank based barometer charts are used. Besides that all advantages and limitations of ratio analysis are applied to present study. The list of the parameters used for in-depth analysis with composite ratios is stated below.

As stated by the rank barometer of deposit ratios it is noticed that BGB got first position in all the ratios of deposit

Deposits	**1**. Cash – Deposit Ratio
	2. SLR Investments to Deposit Ratio
	3. Demand & Savings Bank Deposits to Total Deposits Ratio
	4. Cost of Average Deposit Ratio
Advances	**1**. Priority Sector Advances to Gross Advances Ratio
	2. Return on Average Advances
	3. Secure Advances to Gross Advances Ratio
Average Working Fund	**1**. Operating Cost to Average Working Fund Ratio
	2. Burden to Average Working Fund Ratio
	3. Cost of Average Working Funds
	4. Return on average advances adjusted to Cost of Funds
	5. Return on average investments adjusted to Cost of Funds
Income	**1**. Burden to Interest Income Ratio
	2. Wage Bill to Total Income Ratio
	3. Cost-Income (Efficiency) Ratio
Investments	**1**. Return on SLR Investments
	2. Return on Non-SLR Investments
Operating Expenses	**1**. Wage Bill to Operating Expense Ratio
	2. Burden Ratio
Liabilities	**1**. Deposit to Total Liabilities Ratio
	2. Cost of Interest Bearing Liabilities
Borrowings	**1**. Cost of Average Borrowings

stated above which indicates that the performance of BGB towards Deposits is remarkable compare to the other two banks.

Pursuant to the rank barometer of advances ratios it is found that out of the three ratios of advances, DGB got first position having two ratios which covered 66.67% of the total ratios and BGB got second position having one ratio which covered 33.33% of the total

radios. SGB does not have first position on any ratios of advances. It is observed that the performance of DGB was noticeable.

With the view of rank barometer of average working fund ratios it can be said that BGB and SGB has got first position having two ratios and have covered 40% each of them of the total ratios of average working fund. DGB got second position having one ratio on first position

Exhibit: 1 Deposit Ratios

1	Cash – Deposit Ratio	6.30%	6.00%	6.49%	2	1	3
2	SLR Investments to Deposit Ratio	28.23%	26.70%	28.36%	2	1	3
3	Demand & Savings Bank Deposits to Total Deposits	48.80%	56.29%	42.21%	2	1	3
4	Cost of Average Deposit Ratio	5.32%	4.78%	4.88%	3	1	2
	Total of Ranks on First Position				**0**	**4**	**0**

Exhibit: 2 Advances Ratios

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks		
					DGB	BGB	SGB
1	Priority Sector Advances to Gross Advances	84.69%	74.01%	82.94%	1	3	2
2	Return on Average Advances	9.2657%	9.2629%	8.8271%	1	2	3
3	Secured advances to Gross Advances	83.94%	91.27%	87.21%	3	1	2
	Total of Ranks on First Position				**2**	**1**	**0**

Exhibit: 3 Average Working Fund Ratios

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks		
					DGB	BGB	SGB
1	Operating Cost to Average Working Fund Ratio	2.22%	2.44%	2.24%	1	3	2
2	Burden to Average Working Fund	1.88%	1.74%	1.49%	3	2	1
3	Cost of Average Working Fund	4.84%	4.21%	4.78%	3	1	2
4	Return on Average Advances Adjusted to Cost of Average Working Fund	4.42%	5.05%	4.04%	2	1	3
5	Return on Investments Adjusted to Cost of Average Working Fund	-0.15%	-0.71%	1.06%	2	3	1
	Total of Ranks on First Position				**1**	**2**	**2**

Exhibit: 4 Income Ratios

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks		
					DGB	BGB	SGB
1	Burden to Interest Income Ratio	23.29%	24.25%	21.33%	2	3	1
2	Wage Bill to Total Income Ratio	20.43%	22.19%	22.03%	1	3	2
3	Cost-Income (Efficiency) Ratio	61.91%	63.87%	69.97%	1	2	3
	Total of Ranks on First Position				**2**	**0**	**1**

which covered 20% of the total ratios examined. The performance of BGB and SGB was remarkable from the view point of average working fund ratios.

Corresponding to the rank barometer of "Income" ratios, it was examined that out of the three ratios, DGB got first position having two ratios which covered 66.67% of the total ratios. SGB got second position having one ratio which covered 33.33% of the total ratios. BGB does not reached on first position in any ratios of income. From the rank barometer it can be said that DGB performed very well towards income ratios.

In compliance with the rank performance analysis of return on SLR investments and Non-SLR investments it was noticed that average return of SLR investments of DGB was more compare to other two banks while average return on Non-SLR investments of BGB was more than other two banks. DGB and BGB got first position each on the ratios of investments while SGB does not have first position on any one of the ratios of investments.

Consistent with the rank performance analysis of "operating expense" ratio it was revealed that out of the two ratios of operating expenses BGB and SGB got first position having one ratio each which covers 50% each of the two ratios examined. It can be said that the performance of BGB and SGB was good towards operating expenses ratio.

With the view of above chart of it was clear that BGB score 100% toward liabilities ratio because of it has got first position on the two ratios of total liability. The remarkable performance was derived by BGB in liability ratios.

Exhibit: 5 Investment Ratios

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks		
					DGB	BGB	SGB
1	Return on SLR Investments	7.91%	6.80%	7.11%	1	3	2
2	Return on Non-SLR Investments	9.0171%	9.8371%	9.01866%	3	1	2
	Total of Ranks on First Position				1	1	0

Exhibit: 6 Operating Expense

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks DGB	Ranks BGB	Ranks SGB
1	Wage Bill to Operating Expense Ratio	77.18%	73.37%	78.12%	2	1	3
2	Burden Ratio	15.22%	27.53%	31.87%	3	2	1
	Total of Ranks on First Position				**0**	**1**	**1**

Exhibit: 7 Total liabilities

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks DGB	Ranks BGB	Ranks SGB
1	Deposit to Total Liabilities	82.48%	86.16%	81.96%	2	1	3
2	Cost of Interest Bearing Liabilities	5.47%	4.82%	4.89%	3	1	2
	Total of Ranks on First Position				**0**	**2**	**0**

Exhibit: 8 Borrowings

Sr. No.	Premeditate Ratios	DGB	BGB	SGB	Ranks DGB	Ranks BGB	Ranks SGB
1	**Cost of Average Borrowings**	7.97%	5.70%	5.01%	3	2	1

Exhibit: 9 Rank Performance Analysis of "Composite" Ratios

No.	Ratios	Average Ratios of the Study Period			Ranks		
		DGB	BGB	SGB	DGB	BGB	SGB
1	Cash – Deposit Ratio	6.30%	6.00%	6.49%	2	1	3
2	SLR Investments to Deposit Ratio	28.23%	26.70%	28.36%	2	1	3
3	Demand & Savings Bank Deposits to Total Deposits	48.80%	56.29%	42.21%	2	1	3
4	Cost of Average Deposit Ratio	5.32%	4.78%	4.88%	3	1	2
5	Priority Sector Advances to Gross Advances	84.69%	74.01%	82.94%	1	3	2
6	Return on Average Advances	9.27%	9.26%	8.83%	1	2	3
7	Secured advances to Gross Advances	83.94%	91.27%	87.21%	3	1	2
8	Operating Cost to Average Working Fund Ratio	2.22%	2.44%	2.24%	1	3	2
9	Burden to Average Working Fund	1.88%	1.74%	1.49%	3	2	1
10	Cost of Average Working Fund	4.84%	4.21%	4.78%	3	1	2
11	Return on Average Advances Adjusted to Cost of Average Working Fund	4.42%	5.05%	4.04%	2	1	3
12	Return on Investments Adjusted to Cost of Average Working Fund	-0.15%	-0.71%	1.06%	2	3	1
13	Burden to Interest Income Ratio	23.29%	24.25%	21.33%	2	3	1
14	Wage Bill to Total Income Ratio	20.43%	22.19%	22.03%	1	3	2
15	Cost-Income (Efficiency) Ratio	61.91%	63.87%	69.97%	1	2	3

Exhibit: 9 Rank Performance Analysis of "Composite" Ratios

#							
16	Return on SLR Investments	7.91%	6.80%	7.11%	1	3	2
17	Return on Non-SLR Investments	9.02%	9.84%	9.02%	3	1	2
18	Wage Bill to Operating Expense Ratio	77.18%	73.37%	78.12%	2	1	3
19	Burden Ratio	15.22%	27.53%	31.87%	3	2	1
20	Deposit to Total Liabilities	82.48%	86.16%	81.96%	2	1	3
21	Cost of Interest Bearing Liabilities	5.47%	4.82%	4.89%	3	1	2
22	Cost of Average Borrowings	7.97%	5.70%	5.01%	3	2	1
	Total Ranks on first position				**6**	**11**	**5**

Chart 4: Rank Barometer of "Composite" Ratios

DGB 27.27% | BGB 50.00% | SGB 22.73%
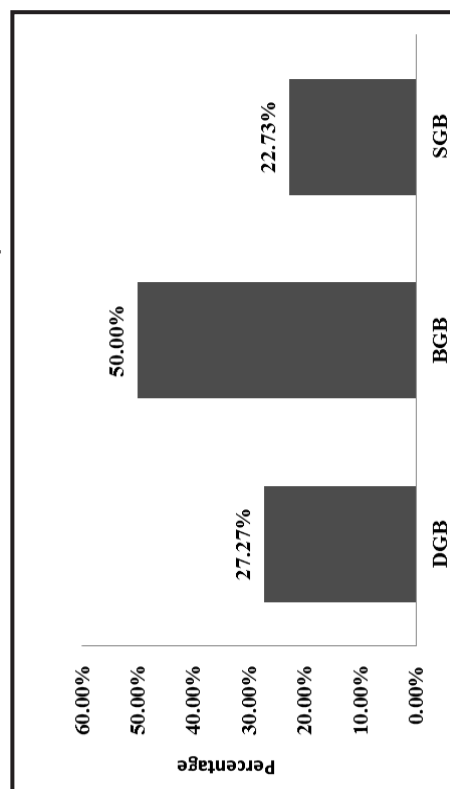
Pursuant to the ratio of cost of average borrowings it was noticed that the average ratio of the study period of SGB was lowest compare to other two banks. The bank managed to bring down the average cost of average deposits and got first position in cost of average borrowings ratio. With the view to cost of average borrowings, the performance of SGB was noticeable.

To arrive on the conclusion about the performance evaluation of RRBs of Gujarat on the basis of composite ratio analysis, following is the list of ratios and their ranks which are used in eight parameters tested above.

Conclusion and Suggestions

In accordance with the exhibit 9 and above chart it is examined that out of the total 22 ratios, BGB got first position in 11 ratios which is 50% of the total ratios. DGB got first position on 6 ratios which are 27.27% of the total ratios and SGB got first position on 5 ratios which are 22.73% of the total ratios.

Taking overview of the total ratios of all three banks it is revealed that RRBs of Gujarat State need to balance demand & savings bank deposits and term deposits in such a manner that fetch reduction in cost of average deposits which in turn will give advantage to increase net interest margin. They also need to earn at higher rate on average advances and on non SLR investment which will increase the total income of the banks. Average working fund should be used in such a way which minimize the cost of average working fund and maximize the income. The structure of borrowings should properly managed that would minimize the cost of borrowings as well as cost-income efficiency ratio should

also be reduce. RRBs of Gujarat State need to utilize average working fund effectively towards investments and advances which help the bank higher margin compare to cost of average working fund. Requirement is also in reduction of other expenses and maximization of other incomes which will help the banks in improvement of burden ratio because The burden ratio indicates the extent of other incomes which used to cover operating expenses. It is arrived by dividing other incomes by operating expenses. Higher the ratio enlarges the margin for interest income to absorb remaining operating expenses and creates an opportunity for improvement in profit.

To improve the business, RRBs need to use effective communications like advertising, help of sakhi mandal, help of SHG, and Kisan mela. The hurdles in improvement of business of RRBs are incomplete documents, lack of security for mortgage loan and habit of taking advances from landlord. RRBs need to change the attitude of employees and management for disbursement of healthy advances. They should focus on the requirement of loan and fulfill it with liberal attitude. They should have to go among the rural mass and solve their problems of legal documents and guide them proper way. They should not wait for the customer to be come in the bank demanding advances because their demand for advances are small in amount which they can derive from landlord or any other way instead of from RRBs. The officers of management and employees of the bank branch should be familiar with the rural mass by going in the villages with effective communication, help of sarpanch, help of sakhi mandal and other rural interme-diary in that particular region and try to

fulfill their requirement of advances. Adequate and ethical attitude with liberal nature of officers of management and employees can help in improvement of healthy advances of the bank because the bank deriving deposits properly and taking finance from NABARD at lower rate but cannot utilize these funds in advances and not able to reach to the rural mass.

Each RRB, Sponsor bank, state government and central government should take necessary steps for improvisation of the performance of the banks and should uplift rural people and rural economy with different innovative and useful means of banking services to rural mass to the maximum extent with concentrate efforts to develop our economy and pride our nation to reach for top position in the world economy.

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Macroeconomic Variables and Stock Price

Tapas Kumar Tripathy

Gautam Mitra

Abstract

A contradictory opinion exists regarding relationship between macroeconomic variables and stock price. There is a school of thought that seeks to propound that stock price does not depend on macro-economic fundamentals. On the other hand, there exists an opposite school of thought that those macro-economic variables have very strong influence on stock price.

In this paper we have ventured to test the first hypothesis with the help of 10 years monthly time series data collected from official websites of money control.com and Reserve Bank of India for a period from 2000 to 2010. After having stationary test we have gone for multiple regression analysis followed by granger causality test and attempted to examine the comparative relevance of two contradictory schools of thoughts.

Another benefit perceived in our study was to know the degree of influence of different macroeconomic variables on stock price. Results depict varying degree of influence of different variables on stock price.

Key words

Macroeconomic Variables, Granger Causality Test, Stock Price, Multiple Regression.

Introduction

There exists a robust literature regarding stock price analysis. Economists, biologist, computer scientists have attempted stock price analysis from their own perspectives. Those studies have been culminated into two popular branches of study in finance. The first school of thought propounds that fundamental factor such as good performance of the company or the industry to which it belongs to or the macro economic variables of our national economy as a whole have a strong correlation with the share price. This branch of study is popularly known as fundamental study. There could be two different approaches through which the study could be made. First approach is Company, Industry and .Economy (CIE). We call it top- down approach. On the other hand we have a reverse approach called Economy, Industry and Company (EIC) approach that gives chronological priority to Economy, Industry and Company too.

However, entirely a different school of thought believes that today's stock price depends on yesterday's price. People of this school of thought are called technical analysts. They argue that EIC or CIE approach has very little to do with

stock price analysis.

Theoretical understanding of macro-economic variables

Aim of our present study is to investigate the impact of fundamental macro economic factors on stock price movement of the Indian stock market. The traditional measure for real economic activity is Gross Domestic Product (GDP) or Gross National Product (GNP). Index of Industrial Production (IIP) increases the corporate earnings. It enhances the present value of the firm and hence it leads to increase the investment in stock price. The impact of exchange rate on stock price depends on the importance of a nation's international trade in its economy as well as the degree of the balance of trade. Theoretically, change in rate of gold price and stock price movement have an inverse relationship. However, it may not have any effect or have insignificant effect due to different time horizon. Wholesale Price Index (WPI) may directly influence real stock prices through unexpected changes in the price level as it results into low level of available surplus in the hand of the common investors. WPI initially has a negative effect on corporate income due to immediate rising cost and slowly adjusting output prices, reducing profits and therefore, the share price.

Upward changes in Consumer Price Index (CPI) may directly influence people, that they are able to invest more in stock market and their ability increases. Crude oil price change also causes the inflation in domestic economy. The impacts of inflation on stock price are not unidirectional. However, our study also found a positive relation-ship between crude oil price and return on stock price suggesting that investing in equity shares act as a hedge against inflation.

Literature Survey

Our review of literature is confined to macroeconomic variables and stock price data.

Bhattacharya and Mukherjee (2006) examined the relationship between the Indian stock market and seven macro-economic variables by applying the techniques of unit root test, co-integration and granger causality test for the sample period of April 1991 to March 2002. Their study indicated that there were no causal linkage between stock prices and three macroeconomic variables such as exchange rate, foreign exchange reserve and value of trade balance. However, they found a bi-directional causality between stock price and rate of inflation during their span of study.

Pethe and Karnik (2000) attempted to find the impact of macroeconomic variables on Indian stock price indices. Their study reported weak causality running from Index of Industrial Production (IIP) to share price indices i.e., SENSEX and S&P CNX NIFTY. Their study concluded that state of economy had affected stock prices. Nageswari and Selvam (2011) examined seasonality effect on stock market. They used Kruskall- Wallis test and linear regression model for analyzing stock market seasonality from1st April 2000 to 31st March 2010 of BSE Index. They observed seasonality in BSE Sensex data and concluded that maximum returns earned on Wednesdays and negative

returns have been earned on Mondays during their study period.

Manjule (2013) examined the causal relation among bullion, foreign exchange and stock market in India by applying unit root test, co-integrations test, factor analysis and granger causality test with selected sample data. He found that bullion price and Sensex movements were unidirectional but foreign exchange rates were inversely proportional to both bullion price and Sensex movements.

Kumar (2013) examined the effect of macroeconomic factors on stock market performance with factor analysis technique. He selected thirteen years data of twelve macro economic variables and applied Principal Component Analysis (PCA) technique to know which variables were significant for stock market returns. He observed that the several macro economic variables were highly correlated and fitting a regression equation pose a severe multi-co linearity problem. PCA highlighted that three factors were sufficient to explain the variation among twelve variables.

Sireesha (2013) also examined the effect of selected macro economic variables on stock returns in India with a data set of NIFTY and gold and silver prices, inflation, GDP, Index of Industrial production (IIP) and money supply. He used linear regression technique and concluded that stock returns were significantly influenced by inflation, GDP, gold and silver prices. He also remarked that gold returns were significantly influenced by exchange rate and money supply. GDP depicted a direct relationship with stock return

and an inverse relationship with that of gold and silver.

Parmar (2013) empirically investigated the relation between stock market and macro-economic selected variables such as reverse repo rate, cash reserve ratio (CRR), statutory liquidity ratio (SLR), inflation, consumer price index (CPI), IIP, gold price rate, crude oil price etc. Relationships between exchange rate and BSE Sensex index have been done by applying correlation and Analysis of Variance (ANOVA) technique. Results exhibited positive as well as negative correlation between Sensex and macro-economic variables. He con-cluded that in long run Indian stock market were more driven by domestic economic factors rather than global factors. He also concluded that investor should consider all relevant sources of inflation while making investment decision.

Singh, Tripathy and Lalwani (2012) investigated influence of factors like exchange rate, inflation with BSE Sensex. In both studies contradictory results have been found in different time horizon. Gulati and Kakhani (2012) concluded that no relationship have been found between NIFTY or SENSEX with exchange rate by applying Granger causality test. On the other hand Singh et al (2012) examined the degree of influence of inflation and exchange rate on NIFTY or SENSEX and their obtained result was 28.4%.

Naik and Padhi (2012), Srivastava (2010) and Naik (2013) studied the impact of macroeconomic variables on stock price. They have taken different macro economic variables to explore the long run equilibrium relationship between

stock market index and macro economic variables. Researchers have considered econometric tools like regression analysis, unit root tests like Augmented Dickey Fuller (ADF) test and Phillip Peron (PP) test. The study discovered that domestic variables were relatively more significant rather than global variables regarding impact in stock market in long run time period.

Many macroeconomic variables have been found are more or less common among the researchers. However, we have noticed exchange rate, gold price, crude oil price, consumer price index, foreign currency assets reserve and wholesale price index have appeared in almost all of the literature and this is the reason that has prompted our study to remain confined to these six macro economic variables only.

Research objectives

In view of the above, our research objectives remain confined to

- Measure correlation between macroeconomic variables and stock market indices.

- Examine nature of dependency and causality between macroeconomic variables and stock price returns.

Data, Methods and Software

We have selected secondary data from 2004 to 2014 from different websites namely www.moneycontrol.com, www.investing.com and www.rbi.gov.in. In cases e.g., Consumer Price Index (CPI) or Wholesale Price Index (WPI) we have taken data set from the period 2006 to 2014 because those indices were not available at that time. As the results of our Durbin- Watson test is 2.066 and it proves the existence of multi co linearity within our data set, we have attempted further to investigate whether stock price is depended on selected macroeconomic fundamentals through multiple regression analysis.

In linear regression, the model presumes that the dependent variable is a linear combination of the parameters. For example, in simple linear regression for modeling data points there is one independent variable : x_i, and two parameters, β_0 and β_1 : and linear regression line is represented by $y_i = \beta_0 + \beta_1 x_i + \varepsilon_i$, $i = 1, ..., n$.

A time series X is said to Granger-cause Y if it can be shown; usually through a series of t-tests and F-tests on lagged values of X that those X values provide statistically significant information about future values of Y.

$$Y_t = a_0 + a_1 Y_{t-1} + ... + a_p Y_{t-p} + b_1 X_{t-1} + ... + b_p X_{t-p} + u_t \qquad (1)$$

$$X_t = c_0 + c_1 X_{t-1} + ... + c_p X_{t-p} + d_1 Y_{t-1} + ... + d_p Y_{t-p} + v_t \qquad (2)$$

Then, testing $H_0 : b_1 = b_2 = ... = b_p = 0$, against H_A : 'Not H_0', is a test that X does not Granger-cause Y.

Similarly, testing $H_0 : d_1 = d_2 = ... = d_p = 0$, against H_A : 'Not H_0', is a test that Y does not Granger-cause X.

Research findings

Our investigation involved two round of multiple regression analysis. First, we ran

our regression on 6 independent variables viz. (i) exchange rate; (ii) crude oil price; (iii) wholesale price index; (iv)consumer price index; (v) foreign currency assets reserve and (vi) gold price. Second round of regression was consisting of two independent variables viz. (1) Gold price per gram; (ii) Foreign currency assets reserve. Our objective in the first round was to examine whether statistical results are in consonance with sound macroeconomic variables. Obtained β values are exhibited in table 1.

Table 1: Independent macroeconomic variable and corresponding beta values

Independent Macro Economic Variable	Beta Values
Exchange Rate	-1.314
Crude oil price	.735
Gold price per gram	-.537
Foreign Currency Assets Reserve	.099
Consumer Price Index	4.038
Wholesale Price Index	-1.859

Table 1 shows independent variable such as exchange rate, gold price per gram and wholesale price index are inversely related with NIFTY movement, on the other hand crude oil price, foreign currency assets reserve and consumer price index are positively related with NIFTY movement.

Now we consider multi colliniarity with the help of variance influence factor (VIF) and tolerance which are depicted in table 2.

Table 2: Variance influence factor (VIF) and tolerance

Macroeconomic variables	Tolerance	Variance Influence Factor
Exchange rate	.058	17.102
Crude oil	.015	67.653
Gold price	.188	5.310
Foreign currency reserve	.150	6.647
Consumer price index	.004	270.989
Wholesale price index	.002	411.329

Since, gold price per gram and foreign currency reserve have VIF values more than 10, we go second round of regression just with these two independent variables. Results of second round of regression are shown in table 3.

R square value .528 indicate that 52.8% prediction of NIFTY could be made through Gold price per gram and Foreign currency provided with this specified time period.

On the other hand we attempt Granger Causality test using four lags. Our null hypotheses are (i) exchange rate do not cause closing NIFTY and (ii) closing NIFTY do not cause exchange rate. Our test

Table 3: Results of Second Round of Regression			
Macro Economic Variables	**Beta value**	**R square value .528**	**Adjusted R square value .519.**
Gold price	.077		
Foreign currency reserve	.675		

results are shown in Appendix 6. Following the test, both null hypothesizes have been accepted as the probability value is more than 5% in both cases.

Conclusion

From the correlation table, given in Appendix 2 it appears that NIFTY movement occurred due to gold price movement per gram and foreign exchange rates. In this table F value is 57.092 and compounding p value has been found to be 0.000 which rejects Null hypothesis and proves that these macroeconomic variables do influence NIFTY movement. Our study further shows 6 macroeconomic variables may predict Nifty movement with 94.7% accuracy. Our second rounds of regression analysis show that two macroeconomic variables (gold price and forex rate movements) can predict Nifty movement with 72.7% accuracy. Durbin Watson statistics in our study were found to be satisfactory.

Limitations of the Study

The study has many limitations. Some of the limitations that we have observed are:

(i) We have not checked data robustness of our sample data.

(ii) Selection of six macro economic variables out of twenty is not based on any statistical analysis like multiple discriminant analyses.

(iii) In the second round of regression we have found that nifty is positively depended on gold price. However, the degree of dependence has been found to be very small in comparison to foreign currency reserve. This finding is against our traditional experience. Reason could be identified with use of monthly data. However, it may be remodeled with daily data in future research.

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Appendix 1
Descriptive Statistics

	Mean	Std. Deviation
Nifty change	.0162	.07085
Exchange rate	48.6264	6.69505
Crude oil price change	81.2324	23.93967
Gold Price change	1.040	422.22519
Commodity Price Index	1.4963	37.29805
Foreign currency reserve	1.1407	3670.42031

Appendix 2
Correlations

		Nifty change	Exchange Rate	Crude oil price change	Gold Price change	Coomodity Price index	Foreign Currency assets reserve
Pearson Correlation	niftych	1.000	-.046	-.213	-.117	-.230	-.141
	exchrate	-.046	1.000	.390	.530	.384	.751
	crudeoil	-.213	.390	1.000	.770	.988	.733
	goldprice	-.117	.530	.770	1.000	.825	.803
	coomodity	-.230	.384	.988	.825	1.000	.764
	foreignreser	-.141	.751	.733	.803	.764	1.000

Appendix 3
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.342a	.117	.081	.06793	2.066

a. Predictors: (Constant), F oreign currency reserve, Crude oil price, Exchange rate, Gold price, CPI, WPI.

Appendix 4
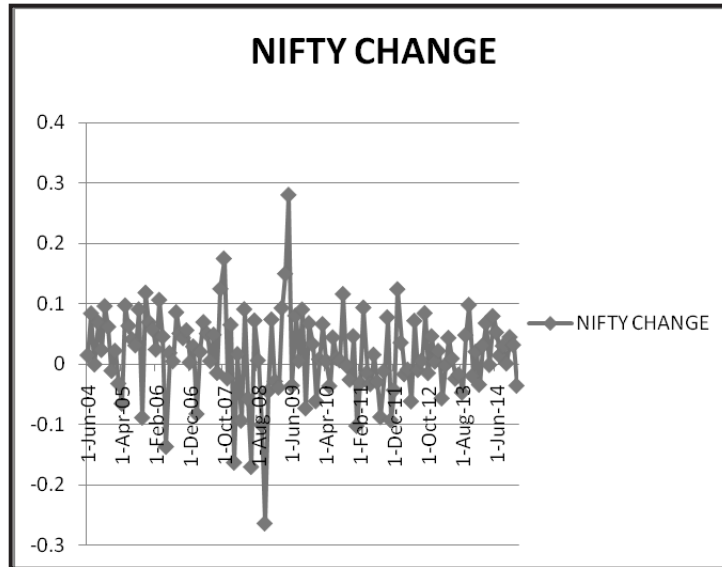
NIFTY CHANGE

Appendix 5
Line chart of dependend variable
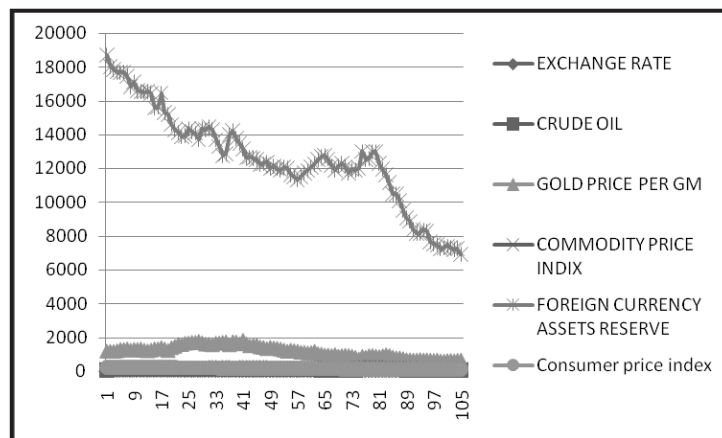
Appendix 6
Granger causality Wald tests:

Equation	Excluded	F	df	df_r	Prob>F
Closing NIFTY	Exchange rate	.19849	4	114	.9387
Exchange rate	Closing NIFTY	1.4746	4	114	.2145

Rationality behind Mispricing of IPOs in Indian Primary Market

Reshma Sinha Ray

Arup Kr. Chattopadhyay

Abstract

In this paper an attempt has been made to investigate different aspects of mispricing of IPOs in Indian primary market during the study period 2000-14. Firstly, the nature of pricing of IPOs is examined. It is seen that IPOs in India are, on an average, underpriced which is consistent with the observations of the earlier studies. The study also observes that the IPO issuing companies in India leave substantial amount of money on the table. Next, we have examined the reasons for which promoters of the issuing companies do not get disappointed in spite of money being left on the table. Appling prospect theory explanation of Loughran and Ritter (2002) the study establishes that when offer price is revised in an upward direction expected wealth of the promoters' have increased. Underwriters take the benefit of the psychological state of promoters and set an offer price which may further rise in listing day.

Key Words

Initial Public Offerings (IPOs), Underwriters, Money Left on the Table, Underpricing, Information Asymmetry.

Introduction

Pricing of initial public offerings (IPOs) is an important area of today's research. Numerous studies have found the evidence that worldwide IPOs are mispriced. To be specific, as described by researchers and academicians, on the average, IPOs are underpriced. Underpricing is defined as the positive difference between first day market closing price and offer price. In the presence of underpricing, IPO issuing firms enjoy significantly high first day returns. Several studies have pointed out that the degree of underpricing of IPOs around the world (special reference to the developed countries) has been increasing since 2000, with onset of internet bubble burst. Emerging markets like China, India have also found the evidence consistent with the studies of developed markets. In a study Cheung, Ouyang and Tan (2009) have considered that Chinese IPOs are excessively underpriced due to regulatory constraints. On the average, Indian IPOs have also witnessed significantly higher degrees of underpricing as is evident from the studies of Shah (1995), Narasimhan and Ramana (1995), Madhusoodanan and Thiripalraju (1997), Ghosh (2004), Mishra

(2010), Bansal and Khanna (2012) etc.

Moreover, the studies of Loughran and Ritter (2002), Ritter (2011), Su et al (2011) have suggested that higher degree of underpricing leads to higher amount of money left on the table. Money left on the table is defined as the first day price gain (difference between first day market closing price and offer price) multiplied by number of shares sold. In this situation, investors who obtain the shares at the offer price receive higher returns but at the same time issuing firms leave huge amount of money on the table. It should be mentioned here, that IPO issuing companies hire one or more underwriters at the time of going to public. Krigman, Shaw and Womack (2001), Loughran and Ritter (2002) have observed that IPO issuing firms rarely complain against their underwriters, even if they have left money on the table. Moreover, at the time of seasoned equity offerings, the firms hire the same underwriter which is one of the focus areas for researchers and academicians in present days. Using a prospect theory argument of Kahneman and Tverskys (1979), Loughran and Ritter (2002) present an explanation that the promoters or executives of IPO issuing companies form an expectation of rise in their wealth when offer price is revised in an upward direction from file price range and that expectation comes true in situation of underpricing. In the study we have examined the price performances of IPOs, and nature and reasons behind money left on the table by IPOs, during the study period spanning from 2000-2014.

Objectives of study

To be specific, in the study our interest is to examine the nature and extent of mispricing of the Indian IPOs and how these are related with the money left on the table phenomenon of IPOs. The second objective of our study is to put forward the reasons why promoters of the IPO issuing companies do not get disappointed in spite of money being left on the table.

The structure of rest of the study is as follows: *Literature Review* deals with existing literature and identification of research gap. *Data Base* associated with sources and description of data used. *Data Analysis and Findings* describes the relationship between the degree of underpricing and money left on the table and partial adjustment phenomenon of IPOs. *Prospect Theory Approach of Pricing Performances* of IPOs presents an empirical evidence of prospect theory following Loughran and Ritter (2002). Concluding part of this paper is reported in the *Conclusion*.

Literature Review

The literature on initial public offerings (IPOs) is vast in nature. Here, we concentrate on a small part of existing literature that includes the pricing performance of IPOs and money left on the table phenomenon.

In a study of McDonald and Fisher (1972) have documented that during the period 1969-70, IPOs are underpriced by 28.5% after the first week of offerings. Ibbotson (1975) has pointed out significantly higher first day returns and considered as mystery of IPOs. Ibbotson and Jaffe (1975) have suggested that on the average IPOs are underpriced. Ritter (1984) has observed that there is a positive relationship between risk and

average initial return in both the natural and non-natural resources. During the period of oil and gas boom, the underwriters exploited the natural resource issues. In a separate study Ritter (1991) observed that average return of IPOs was 14.3% during the period 1975-84. In recent days, most of the pricing literatures have witnessed universally higher degree of underpricing of IPOs. Similar patterns exist in emerging markets like India. Shah (1995), Narasimhan and Raman(1995), Madhusoodanan and Thiripalraju (1997),Ghosh (2004), Mishra (2010), Bansal and Khanna (2012) all documented an higher degree of underpricing.

In order to explain positive average first day returns, a number of studies focus on asymmetric information based models. Rock (1986) in his adverse selection model, assuming that there is no agency problem between underwriters and IPO issuing firms, divides investors in two categories, namely informed investors and uninformed investors. Informed investors can predict the actual value of shares and bid for underpriced IPOs thereby receiving the benefits of underpricing from the hot issue market. On the other hand, uninformed investors receive residue shares when offer price is lower than the market price and problem of winner's curse arises. Informed investors create negative externality to uninformed investors.

Benveniste and Spindt (1989) have developed 'information acquisition theory' and pointed out that in the book building period regular investors truthfully disclose their private information about the valuation of the IPO issuing company to underwriters. In order to give benefit to investors underwriters partially increase offer price and reward them with favourable allocation of underpriced shares. But, if regular investors reveal negative information, offer price is revised in downward direction. As a result, underpricing will be negligible. However, Loughran and Ritter (2002) have developed another theory of partial adjustment of offer price with the help of prospect theory assuming that there is an agency problem between underwriters and IPO issuing companies. They have posited that when offer price is revised in an upward direction from midpoint of file price range, the wealth of the promoters of the issuing companies increases in an upward direction. The authors have pointed out that underwriters take the benefits of the psychological states of issuers. Therefore, they have revised a part of offer price. In this context they have developed the concept of money left on the table and reports that as offer price is revised in an upwards from midpoint of original file price range, both money left on the table and revaluation of shares rise.

In a study Arosio, Guidici and Pallari (2000) have examined that internet stock IPOs left substantial amount of money on the table in the context of Euro's second market (new-pan European second markets) during the study period, January 1st 1999 to May 1st 2000 and witnessed indeed high average initial return (76.3%) and huge volume of money left on the table (4.6 billion euro) for internet stock IPOs. The study has also suggested that when offer price is revised in an upward direction, controlling shareholders' wealth increases which is

consistent with the prospect theory of Loughran and Ritter (2002).

Su, Hooper, Dutta and Yi (2011) have examined how investors of issuing companies received profits at the time of issuing IPOs for both the US and other international markets during the study period spanning from 1990-2002. The study has revised the formula used in the study of Loughran and Ritter (2002) and supported the observations of the latter.

From the above studies it appears that underpricing is highly related to money left on the table in the context of developed countries. Also emerging markets, like India where book building process is relatively new mechanism (that started in 1999), observe underpricing of IPOs and thereby money left on the table. Mishra (2010) in his study attempts to examine the price performances of IPOs during the study period spanning from April 1st, 1997 to March 31st, 2008, wherein 235 companies got listed from Bombay Stock Exchange (BSE). The study has investigated how the changes in institutional regulations affect mispricing of IPOs and has pointed out the existence of underpricing phenomenon [where the level of underpricing is 14.45% (simple) and 13.04% (inflation adjusted)] which is consistent with earlier studies and supported the existence of hot issue market. The study also suggested that there exists no difference between two different mechanisms of pricing of IPOs, namely, book building and fixed price mechanism.

Research Gap

From the review of existing literature, mentioned above, it appears that there remains a scope of conducting a fresh research in the context of the Indian primary market, more specifically, regarding the price performances of IPOs and money left on the table and the relationship between them in recent period. To the best of our knowledge there is hardly any literature in India that focuses on the implications of the money left on the table. Here, we are interested to investigate the reasons for which promoters of the IPO issuing companies do not get disappointed in spite of money being left on the table. Finally, a much more recent study period has been naturally targeted for the current study, when our study period is spanning from January 1st, 2000 to December 31st, 2014.

Database

Data source

Data have been collected from various secondary sources, like, Capitaline Database software packages (Mainly, "CAPITALINE" developed, marketed and maintained by Capital Market Publishers (Pvt.) ltd, Mumbai), official websites of National Stock Exchange (NSE), Securities Exchange Board of India (SEBI), Reserve Bank of India(RBI) and IPO issuing companies.

Data Period

In the study, fifteen years' data have been used from January 1st, 2000 to December 31st, 2014. The period not only witnesses a number of shocks, like capital market scam, global economic meltdown but also recovery and boom. An overall performance of Indian IPOs

can be better captured from the study period.

Variables taken into our study

IPO issuing companies name, issue date, offer price, price band, price mechanism, listing date, first day market closing price, issue amount (quantity), promoters share holdings in absolute and percentage terms before and after issuing of IPOs etc. have been collected from Capitaline database. Consumer Price Index (CPI) data have been collected from the official website of central bank of India, i.e., Reserve Bank of India (RBI) to compute inflation adjusted values of the variables under study.

Sample of our study

During the study period from January 1st, 2000 to December 31st, 2014, 396 numbers of companies got listed at NSE, under the book building mechanism. Due to non-availability of requisite classified data we exclude 72 companies from them and take rest 324 companies as the sample of our study.

Hypotheses

The main objectives of our study can be expressed in terms of some hypotheses which are mentioned as below.

1. On the average, IPOs are mispriced in India. To be specific, the Indian IPOs are mostly underpriced and a significant portion of IPO issuing companies 'money is left on the table'.

2. Promoters of the IPO issuing companies do not get disappointed in spite of money being left on the table.

Data Analysis & Findings

a. **Size of Underpricing and Price Revision**

Revision of offer price from file price range and average underpricing of IPOs in India during the study period are shown in Table-1. During the study period it is observed from Table-1 that out of 15 years as many as in 12 years IPOs in India are underpriced and the average size of underpricing is here 26.3%, which is consistent with the earlier studies of India. It is to be noted here that underpricing is measured as the percentage difference between the offer price and first day market closing price. The years 2001, 2002 and 2011 documented overpricing of IPOs (i.e., the first day return being negative). Further the year 2001, 2002 and 2011 have witnessed relatively small number of firms involved in the IPO issuing activity.

b. **Partial Adjustment of Underpricing Phenomenon**

The proponents of partial adjustment phenomenon argue that when issuing firms are operated under the book building mechanism, the variable, revision of offer price from midpoint of original file price range has greater influence to forecast the first day return of IPOs.

Table-1: Number of IPOs, Average Size of Underpricing and Revisions of Offer Price from File Price Range

Year	No. Of IPOs	Average Underpricing	Percentage of IPOs with Downward Revision in Offer Price	Percentage of IPOs with Revision of offer Price in between File Price Range	Percentage of IPOs with Upward Revision in Offer Price
2000	4	14.05	0	100	0
2001	1	-42.64	0	100	0
2002	1	-1.44	0	100	0
2003	4	74.45	0	0	100
2004	17	45.9	6.25	18.75	75
2005	27	45.81	14.81	0	85.15
2006	52	26.06	15.38	1.92	82.69
2007	74	47.21	12.16	2.7	85.13
2008	31	12.38	25.8	3.22	70.96
2009	15	9.80	6.67	6.67	86.67
2010	57	12.94	28.07	3.5	68.42
2011	24	-4.37	8	4	88
2012	10	4.95	30	10	60
2013	3	36.5	0	0	100
2014	4	32.26	0	0	100
Total	**324**	**26.3**	**16.87**	**6.13**	**80.36**

Note: Entire sample comprises of only completed IPOs; issue withdrawn or postponed issues are eliminated from the sample. First day market closing price is obtained from official website of NSE. Midpoint of file price range is computed as: (maximum price + minimum price)/2 .Comparing offer price with the midpoint of respective original file price range, revision is computed.

When offer price is revised in an upward direction, on the average, degree of underpricing remains higher and vice versa. The phenomenon of adjustment of first day market return from the revision of file price range is termed as partial adjustment. In a study Hanley (1993) first reported the partial adjustment of offer price of IPOs. Later, Loughran and Ritter (2002) also presented the partial adjustment of underpricing of IPOs.

In Table-2 the important results of partial adjustment phenomenon for the price performance of IPOs are presented. On the basis of revision of offer price from original file price range, IPOs are classified in three different categories, namely, offer price is revised in downward direction (i.e., offer price lies below midpoint of original file price

range), offer price lies within the midpoint of original file price range and offer price is revised in an upward direction (i.e., offer price lies above midpoint of original file price range).

Table-2 Under pricing, Money Left on the Table (Simple and Inflation Adjusted) and Revaluation on the basis of Revision of Offer Price of IPOs

Revision of Offer Price	Percentage of Distribution of IPOs (%)	Percentage of (average) underpricing (%)	Percentage of IPOs whose first day return is positive (%)	Average money left on the table	Average inflation adjusted money left on the table	Average Revaluation
OP<LO	15.95	5.10	9.61	-419659268	-143346324	-3799144958
OP=LO	5.52	-0.51	55.56	235530863	-130013475	596717878.3
OP>HI	78.52	32.04	82.74	989289885	905099658	6203915650
ALL	100	26.30	66.25	764364422	679552453.7	5147354039

Note: Revision of offer price is computed from midpoint of original file price range. Simple money left on the table is computed as the difference between first day market closing price and offer price, multiplied by number of shares sold. Adjusted money left on the table is computed as $Y^*=y/(1+p/365)^t$ where y money left on the table, p annual inflation rate, t no of days between offering and listing, y^* is inflation adjusted money left on the table and $p=(CPI_t - CPI_{t-1})/CPI_{(t-1)}$. CPI_t stands for consumer price index at t th year and $CPI_{(t-1)}$ indicates consumer price index for (t-1) year.

Table-2 reports that when offer price is revised in upwards, on the average, first day return is higher [32.04%]. In case of revision of offer price in a downward direction, average underpricing is relatively lower [5.10%], implying thereby that first day average return can be forecast by revision of offer price. This empirical result supports the earlier observations on partial adjustment phenomenon of Hanely (1993) and Loughran and Ritter (2002).

It is further observed from Table-2 that during the study period, average money left on the table is Rs. 76 crore (inflation adjusted money left on the table is Rs. 67 crore). When offer price is revised in upwards, on the average, IPO issuing companies leave a large amount [Rs.98 crore (inflation adjusted money left on the table is Rs.90 crore)] on the table. When offer price is revised in downwards, the issuing firms in fact acquired rather than leaving money on the table (Rs. 41 crore and Rs. 14 crores for simple money acquired from the table and inflation adjusted money

acquired from the table respectively). So, underpricing of IPOs leads to leave more money on the table.

Further revaluation of promoters shareholdings of IPO issuing companies are reported in the last column of Table-2. Revaluation is computed on the basis of promoters shareholdings (i.e., number of shares hold by shareholders on the day prior to listing of IPOs) multiplied by the revision of first day market closing price from offer price. When offer price is revised upwards, on the average, revaluation of promoters shareholding has documented the highest value [Rs. 62 crore (inflation adjusted revaluation of shareholding is Rs. 58 crore)]. From Table-2, it is observed that when offer price is revised upwards, on the average, money left on the table raises as well as higher degree of revaluation of promoters' shareholding takes place, implying thereby that higher the degree of money left on the table, higher will be revaluation of promoters' shareholdings. Due to this, perhaps, promoters do not get disappointed in spite of money being left on the table in IPOs, which can, however, be established in better way by using prospect theory.

Prospect Theory Approach of Pricing Performances of IPOs

Prospect theory is an instrument of behavioural finance, implying that investors are concerned about change in their wealth rather than wealth level. Using prospect theory, Loughran and Ritter (2002) have argued that pre-issue shareholders don't get disappointed even if IPOs leave substantial amount of money on the table.

Actually, if revaluation of promoters' shareholdings is higher than money left on the table by respective IPO issuing companies, there will be a gain in promoters' wealth. This condition, following the study of Loughran and Ritter (2002) can be written as,

[(shares retained by the ith shareholder + secondary shares sold by the ith shareholder) × (Offer price - midpoint of original file price range) + (shares retained by ith shareholder) × (market price - offer price)] > [(market price - offer price) × (secondary shares sold by the ith shareholder + primary shares sold by issuing firm) × (shares retained by the ith shareholder / shares retained by all shareholders together)].

In the stated condition L.H.S. represents revaluation of promoters' shareholdings whereas the R.H.S. of the inequality indicates money left on the table. To enquire whether the stated condition of Loughran and Ritter (2002) is valid or not in Indian primary market, we have computed average revaluation and average money left on the table which are reported in Table-3. Due to non-availability of data on promoters' shareholding, we have excluded some IPOs from our sample and 289 companies with promoters' shareholdings are taken into consideration. The data on secondary shares sold by the pre-issue shareholders are also unavailable for all the sample companies in India. Thus, we have excluded it from both the sides of the stated condition. IPOs having negative values in both the sides are also excluded from our analysis and finally we proceed with only 184 IPO issuing companies in our analysis.

In Table-3, year-to-year revaluation of promoters' shareholdings and money left on the table of the IPO issuing companies are reported. If the ratio of revaluation (considered in L.H.S.) of promoters shareholdings and money left on the table (reported in R.H.S) is greater than unity, the stated condition would be fulfilled. It is seen from Table-3 that the ratio of revaluation of promoters shareholdings to money left on the table fulfils the stated condition throughout the study period. To be specific, for the entire study period, the average ratio of revaluation to money left on the table is 2.85. It is observed that the ratio is maximum in 2011 (3.98) and reaches its minimum level in 2014 (1.38). Therefore, it is observed that prospect theory is applicable in the Indian primary market. Consequently, the promoters in India are not disappointed even if their IPOs are underpriced and they may appoint the previously appointed underwriters for their next IPOs also (as is observed in reality).

Besides this, we have computed annual return on CNX Nifty index. Annual returns on Nifty index point out the overall conditions of the capital market i.e., on the whole ups and downs of market can be captured by it. From Table-3, it is seen that, on an average, during the study period Indian capital market raises by 16.72%. It is also observed that while most of the years witnessed positive returns, a few years (2000, 2001, 2008 and 2011) reported negative changes in market. From the estimated results of Table-3, it is seen that whatever be the situation of market (whether market return is positive or negative), the ratio of revaluation of promoters shareholdings to money left on the table is always greater than unity,

indicating the validity of prospect theory in the Indian context.

Table 3: An Empirical Analysis of Prospect Theory

Year	No of IPOs	Annual Nifty Return	Revaluation	Money left on the Table	Ratio of Revaluation to money left on the table
2000	1	-20.63	188879850	128405683	1.47
2001	0	-15.56	-	-	-
2002	0	3.61	-	-	-
2003	3	70.86	4567945301	2556368674	2.02
2004	13	8.79	29408540631	18524963205	1.97
2005	20	34.11	2352343659	1442594811	2.31
2006	32	39.86	3296541126	2171586517	2.18
2007	42	53.18	6876739495	5189824957	2.32
2008	16	-51.83	3502606742	2270737077	2.41
2009	9	71.45	8813036334	2696810234	2.72
2010	27	17.24	34687299116	22020123788	2.86
2011	12	-24.9	699245787	289274534	3.98
2012	4	27.35	1885905855	600182745	2.89
2013	1	5.93	16572511564	5297421031	3.12
2014	4	31.43	2714490765	1662550026	1.38
All	**184**	**16.72**	**10613283426**	**6727735981**	**2.85**

Note: (i) Annual Nifty return is computed as the percentage difference between closing price of last day of trading of the year from the first day market closing price of the corresponding year.(ii) Due to non-availability of required data on promoters shareholdings, we have excluded companies got listed in 2002 and 2003.

Conclusion

In this paper, we have, firstly, observed that on an average, degree of underpricing of IPOs in India is 26.3% during the study period 2000-14 which supports the observations of the earlier studies. It is also seen that, on the average, IPO issuing companies left Rs. 76 crore on the table over the study period.

Secondly, in our study, we have examined the reasons for which promoters do not get disappointed in spite of money being left on the table. Using partial adjustment framework, it is seen that when offer price is revised in an

upward direction, IPO issuing firms leave larger amount of money on the table. Also when offer price is revised upwards, revaluation of promoters' shareholdings rises. Further by applying the prospect theory explanation of Loughran and Ritter (2002) in our context, it is observed, that the ratio of revaluation of promoters shareholdings to money left on the table is greater than unity, leading to upward revision of market price. All these cause to increase in promoters expected wealth. Definitely, promoters of the issuing companies get 'happy' with increase in wealth. Underwriters take the benefits of this psychological state of promoters, so that they set offer price in such a way which may further rise.

Limitations of the study

Our study, like other empirical studies, is not free from limitations. Due to non-availability of data on secondary shares sold by promoters in the context of India we could not apply the prospect theory in its totality.

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Organization Development Intervention through Quality Circles for Performance Management and Skill Development: An Empirical Analysis

Manoj Pillai

Abstract

The dynamic business environment has resulted in fast changing trends in human resources management and the domain of human resource management trends have extended beyond 'human issues' per se, but the basic thrust and orientation of these changes focus on the necessity to develop a skilled and flexible work force popularly termed as 'human capital' in order to effectively manage the human talent and to compete in the contemporary stiff competitive business environment. Organizational development is one of the most significant developments in the field of organizational behavior in recent years. It represents the application of social and behavioral sciences in order to gain better insights into understanding the human aspects of formal groups and organizations. Quality Circle is an innovative organization development intervention technique designed to develop human resources. It is a problem-solving technique involving a group of employees who meet regularly to solve workplace problems. Quality circles are established on a permanent basis and are not ad hoc bodies created to solve specific problems. Circle members decide the problem areas to be studied, which may include productivity, cost, safety, and product quality. This article delves into all the relevant aspects of Quality Circles.

Key Words

Quality Circle, Organizational Development, Human Capital.

Introduction

The dynamic business environment has resulted in fast changing trends in human resources management and the domain of human resource management trends have extended beyond 'human issues' per se, but the basic thrust and orientation of these changes focus on the necessity to develop a skilled and flexible work force popularly termed as 'human capital' in order to effectively compete in the contemporary stiff competitive business environment. The fundamental constructs which has resulted in the competitive challenges and a dynamic business environment can be highlighted through the following points:

Global Orientations

In order to grow and prosper many companies are seeking business opportunities in global markets. The economic liberalization and increased privatization throughout the globe has resulted in competition and co-operation with foreign companies on a larger scale, particularly after 1991. These new parameters and constructs of international business has made the nature of global business extremely dynamic and it is essential to have a balanced approach on the issues related to different geographies, cultures, laws and business practices. The neo liberal economic environment provides new and broader opportunities for organizations, but it also represents an increase in the complexities of human resources management.

Genesis of New Technology

Rapid advances in computer technology have enabled organizations to take advantages of information technology infrastructure. Use of internet to transact business has become so pervasive for both large and small companies that the concept of 'E - Commerce' has become a buzz word and an important concept of the new millennium. 'Virtual Organizations' have become reality and all these developments have direct implication for human resource management. Similarly there is large scale use of information technology in the organization human resources information system (HRIS).HRIS provides current and correct data for purposes of HR planning, HR forecasting, training promotion etc.

Managing Change

The dynamic nature of the business has resulted in rapid changes in the business approaches. Change management has become the order of the day. To manage change, executives and managers have to envision the future, communicate the vision to the employees, set clear expectations for performance and develop the capacity to execute by reorganizing people and reallocating assets. Therefore the managers have an important role in facilitating change, particularly in helping communicate business needs to employees and in listening to employee's concerns.

Responding To the Market

Meeting customer's expectations is essential for any organization. Apart from the various internal management issues, managers must also meet customer requirement of quality, innovation, variety and responsiveness. Organizations have evolved innovative tools like Total Quality Management (TQM) and Process Reengineering to respond to the market demands. Enhancing productivity and quality now go hand in hand not only to compete but also to survive.

Containing Costs

The competitive business environment throughout the globe has forced companies to initiate strategic cost reductions in order to stay competitive. Labour costs are one of the largest expenditures of any organization particularly in service and knowledge -

intensive industries and companies. Organizations are designing and implementing innovative recruitment and employment policies to minimize their operational costs related with human resource management. These initiatives include downsizing, outsourcing and employee leasing, and productivity enhancements, each of which has direct impact on HR policies and practices.

De Nisi (2008) believes that the dynamic and competitive business environment has resulted in firms seeing human resource management as part of a psychological contract for the employees working towards the firms strategic goals. A psychological contract is the overall set of expectations held by the employee with regard to what he or she will contribute to the organization with regard to what it will provide to the individuals in return.

Environmental Changes, Human Resource Challenges and the Dynamics of Organization Development

There have been widespread social and economic changes around the globe. The environmental changes occurring due to globalization, information technology, quality control, workforce diversity and ethics are posing challenges as well as opportunities. In this neo liberal competitive business environment knowledge workers have become the real capital and expert information has become more powerful than hierarchy based authority. Bontis, N. et.al (2009) opines that human capital represents human factor in the organization; the combined intelligence, skills and expertise that gives the organization its distinctive character. The human elements of organization are those that are capable of learning, changing, innovating and providing the creative thrust which if properly motivated can ensure the long term survival of the organization. Scarborough (2002) believes that the concept of human capital is most usefully viewed as a bridging concept-that it defines the link between human resource practices and business performance in terms of assets rather than business process. Therefore recruitment and retention of talented knowledge workers has become a real challenge to the management and human resources department. Organizational development is one of the most significant developments in the field of organizational behavior in recent years. It represents the application of social and behavioral sciences in order to gain better insights into understanding the human aspects of formal groups and organizations. The genesis of organizational development can be traced to 1940s when behavioral scientists in United States and Great Britain made attempts to resolve social problems in organization using behavior science. Gradually, Organization Development developed into a discreet body of knowledge in the domain of Human Resource Management. Organization Development has attained tremendous significance over the years, and in contemporary times, it addresses a wide range of issues associated with organizational and human resource effectiveness. Pasmore & Fagnas have classified the Organizational Development metavalues into the following four concepts:

(a) Respect for People - People should be treated with dignity and respect

because they are perceived as responsible, conscientious and caring.

(b) Trust and Support - Effective organizations have regenerative interaction climates. They are characterized by trust, authenticity, credibility, openness and support.

(c) Power Equalization - To achieve the best collaboration, organization should emphasize egalitarian participation with power sharing and deemphasize authority and control hierarchies.

(d) Confrontations - Problems should be shared and confronted so that they can be openly dealt with by all the concerned.

(e) Participation - Those who will be living with the change should be involved in planning and implementing it. If they understand it, and participate in planning it, they will be more committed to implement it.

Organizational Development Interventions and the Dynamics of Quality Circles

Organizational Development techniques, also known as Organizational Development interventions are essentially a set of planned activities which are introduced to bring the desired change in the organization. Thomas & Edgar (2002) classify organizational development interventions into various categories based on its functional applications. The first category of interventions is the Human Process interventions which primarily focus on the issues of How to communicate, How to solve problems, How to interact and How to lead. Sensitivity Training, Process Consultation, Third Party Interventions, Role Negotiations, Team Building, Survey Feedback and inter group relations are some of the common techniques associated with Human Process Interventions. The second category of Organizational Development Interventions is the Human Resource Interventions. This technique emphasizes on how to attract competent people, How to set goals and reward people, and how to plan and develop people's career. Goal Setting, Reward System, Career Planning and Development and Stress Management. The third categories of Organizational Intervention are the strategic intervention which deals with the issues of what functions, products, service and markets? How to gain competitive advantage? How to relate to environment? What values to guide organizational functioning etc. Strategic Change, Culture Change, Transagenization Development and Reengineering are some of the major intervention techniques of this category. Techno structural interventions are the fourth category of intervention specifically related with division of work, designing of work, production schedules and processes, and coordination. Work design, Structural redesign, Collateral structures and Quality of work life are significant structures of this category. Desimore (2002) adds Socio - Technical interventions to the above mentioned categories. Socio Technical interventions are very popular since 1970's which emphasizes on quality and team work. Group formation, types, processes and the dynamics of formal and informal groups are the key components of this

intervention. Total Quality Management (TQM), Quality Circles (Q.C), Self Managed Teams (S.M.T.), Cross Functional Teams (C.F.T.) relate to important interventions techniques.

Historical Insights to Quality Circle

The Quality Circles concept was initially developed in Japan to involve foreman and workers in quality control. The earliest reference to quality circles can be dated to 1962, when the Union of Japanese Scientists and Engineers first published Genbe - to - QC (Quality control for the foreman) and launched a drive to encourage the formation of Quality circles in Japanese industry. Matsuyama carrier equipment circle of Japan Telephone and Telegraph was the first company to register Quality Circle. Slowly but steadily, circles spread widely through Japanese industry and by 1980s more than 1, 00,000 circles were registered. The dissemination of information from Japan to United States and other countries helped the concept of Quality Circles to grow and develop. The first major quality circle program in United States was started at Lockheed's Aeronautics division in Santa Clara, California. The structural base of American "Quality Circle" model builds on its Japanese parents, but it also differs from it in crucial respects. There are three fundamental features which are commonly shared by Japanese and American Circles. These are as follows:

(a) Both are structurally organized as small group of workers, with little formal differentiation within the group other than a leader.

(b) Circles have the generic purpose of improving work processes rather than being centered on broader issues of management labour communication and human dimension of work.

(c) Circles are culturally organized around motive of voluntarism and autonomy from formal organizational structures. This translates into some choice about forming circles and/or joining them (with management in a supportive rather than commanding role), identification of circle of what issues to attack and how to do so, and self regulation by the circle of its group process. It also involves the absence of a defined responsibility and authority of circle over corporate decisions or recourses.

The Japanese and American concepts differ with each other on the following two points:

(a) Japanese circles focus on quality control, while American quality circles were understood as appropriate vehicles for addressing almost any workplace problem or issue.

(b) Japanese circle formulate and carry out workplace improvements, while American Quality Circles carry on making recommendations to management.

In using the Quality circles concept there are three main parts to go through. The steps are identifying, analyzing, and solving quality-related issues (Russell, 648). After the quality circle is set up the next step would be to train the group. The training is to make sure all the

voluntaries understand the order and meaning of the steps and how to go through them.

Following training is the first real step in the Quality circle process-problem identifying. At this step the members of the group are free to brainstorm about the problems they face in the work-place. Within this brainstorming session there are no bad ideas. After the members have some up with everything they can think of they go through the list and analyze each problem individually.

This step of problem analysis is to look closer at one problem at a time and having everyone's input on how to solve it. This step involves opinions from the members and research. The opinions are important because the members in this group are the ones who are faced with the problems at hand. The research can help to show the member what the result or effect will be with the way they may choose to solve a problem. After they are done with the analysis and come up with the solution they have entered the next step.

The last step in quality circles is the solution. The members prepare how they intend to solve the problem that was first presented in the brainstorming. The solution is explained in how it works and what the solution results should be. Those results are then showed to the mangers and group as a whole in a presentation type of meeting. The three steps of identifying, analyzing, and solving are all very important in com-pleting the process of a quality circle (Russell, 648).

Key Players of Quality Circle

The important persons associated with the effective implementation and operation of Quality Circles is as follows:

(a) Top Management - It comprises of the Chairman, Managing Director, Functional Directors and other Directors on the board. All the policies, guidelines, and reviews are implemented by the top manage-ment.

(b) Co-coordinator - He/She is gener-ally a senior manager who coordi-nates the entire functions. Some of his basic tools are as follows:

  (i) He registers the circle.

  (ii) Interacts with all.

  (iii) Convenes the meeting of the steering committee.

  (iv) Maintain records, organizes systematic documentation.

  (v) Arranges management presentation.

  (vi) Organizes various training programmes, including exposure programmes.

  (vii) Arranges presentation of case studies in sister units.

  (viii) Publishes Periodicals.

  (ix) Organizes conventions at regular intervals.

(x) Arranges periodical surveys.

(c) Steering Committee- A steering committee is a monitoring group headed by the head of the organization, to guide, review and improve the functioning of Quality Circles. Through effective reviews, the committee makes functional heads accountable for the Quality Circles healthy functioning

(d) Facilitator - He/She is a nominated senior person of an area who acts as a catalyst and stimulator of the Quality Circles. The main task of the facilitator is to develop the workers working with him to enable them to achieve and give them pride of achievement. Facilitators are basically role model and value shaper.

(e) Leader - A leader is a person chosen by the members of the circle through consensus. The important functions of a leader of Quality Circles are as follows:

   (I)   Conducts meetings regularly.

   (ii) Moderate in meetings.

   (iii) Involve all the members.

   (iv) Maintain cohesiveness of the group.

   (v)   Co-ordinate.

   (vi) Take team towards the goal.

   (vii) Take care of task behavior of the group and team mainte-nance.

(f) Members - They consists of small group drawn from a workshop or unit that studies and applies quality control methods, particularly careful observation and statistical analysis, to production problems. They are "jishusei", a term often translated as voluntary, but perhaps closer in meaning to autonomous.

Objectives of the Study

There is a paradigm shift in the role and approach of business in the contemporary competitive business environment. The ever increasing and deepening impact of economic liberalization and globalization throughout the globe has transformed the basic vision, structure and approach of business enterprises. Among the numerous changes that are being witnessed in the corporate policy formulations, the most striking and vital change is the basic approach of organizations in the matter related to the human resources management domain. Human capital is most important component required for organizational effectiveness and profitability. A skilled, flexible and motivated work force is of paramount importance. In general more firms are seeing Human Resource Management as part of a psychological contract for the employees working towards the firms strategic goals. A psychological contract is the overall set of experiences held by the employee with regard to what he or she will contribute to the organization and held by organization with regard to what it will provide to the individuals in return. Quality Circles are one of the socio technical organizational development intervention specifically designed to

develop a spirit of cooperation, mutual trust and cooperation.

Quality circles supplement employees with authority and hierarchical role with knowledge and skill, replacing traditional authority assigned role, which create more congenial work environment.

Against this backdrop, the objectives of my research are as follows:

(1) To study the environmental changes and its impact on Human Resources

(2) To analyze the fundamental constructs of Organizational Development.

(3) To examine the various aspects of Quality Circles

(4) To study impact of Quality Circles on efficiency, motivation, process improvement, and interpersonal relationships in an organization.

Research Methodology

To achieve the objectives listed above, I have proceeded in the following manner.

A) Data Collection

The proposed research work is primarily based on primary data.

B) Research Approach

Survey method is adopted to collect information relating to primary data.

C) Research Instrument

A detailed questionnaire is prepared after an extensive study of the literature keeping in mind the objectives of the study.

D) Sampling

The research work is based on a sample of 40 corporate managers. All the respondents are members of Quality Circles. A detailed questionnaire is used in collecting relevant information relating to the various facets of Quality Circle and its impact on the employees and on organization efficiency.

E) Data Analysis

The data collected is tabulated and codified. Appropriate statistical measures like percentage, correlation, frequencies, and cross tribulations etc. has been used for the analysis of data. The help of statistical package for social science research (SPSS) software version 13.0 for windows is also taken to analyze the data.

Literature Survey

Robbins (2009) describes organizational development as a term used to encompass a collection of well planned change interventions built on humanistic - democratic values that seek to improve the organizational effectiveness and employee well being. Lines, R. (2004) mentions that the organizational development paradigm values human and organizational growth, collaborative and participative processes, and a

spirit of inquiry. Cook (2001) avers that organization development is a system wide application of behavioral science knowledge to the planned development and reinforcement of organizational strategies, structures and process for improving organizations effectiveness. Hellriegal, Don (2001) writes that as a field of behavioral science, organization development draws heavily from psychology, sociology and anthropology. It relies on information from personality theory, learning theory, motivation theory and on research about group dynamics, power, leadership and organizational design. Bennis, W (1969) describe that organizational development is a response to change, a complex educational strategy intended to change beliefs, attitudes, values, and structure of organizations so that they can better adapt to new technologies, market challenges and the dizzying rate of change itself. McLagan (1989) believes that organizational development focuses on assuring healthy inter and intra unit relationships and helping groups initiate and manage change. Its primary emphasis is on relationship and process between and among individuals and groups. Its primary intervention is influence on the relationship of individuals and groups to affect an impact on organization as a system. Fench & Bell (1996) define Organization Development as a long term effort, led and supported by the top management, to improve the organization's visioning, empowerment, learning, and problem solving processes, through an ongoing collaborative management of organization culture - with special emphasis on the culture of intact work teams and other team configurations - utilizing the consultant- facilitator role and the theory and technology of applied

behavioral science, including action research. Cummings & Worley (2001) defines Organizational Development as a system wide application of behavioral science knowledge to the planned development and reinforcement of organizational strategies, structures, and processes for improving an organization's effectiveness.

Data Analysis and Interpretation

The respondents were asked to rank certain important variables associated with Quality Circles on a five point scale with 1 as strongly disagree and 5 as strongly agree. Table 1 shows the mean scores and standard deviation of the responses relating to some of the important variables.

The above highlighted statistical data reveals that all the respondents were highly optimistic and positive towards the various contributions of Quality Circles to their individual growth as well as the growth in productivity and organizational efficiency.

The mean scores of majority of the responses are in between 4 and 5 which indicate that the responses are overwhelmingly tilted towards Strongly Agree. Their involvement in the quality circles resulted in the improvement of interpersonal relations, mutual trust and communication. They also opine that Quality Circles contributed highly in process improvement and enhancing the overall efficiency of the firm.

A two tailed correlation test is applied to measure whether any favorable correlation is present between lengths of association with the circle and enhancement of the problem solving

Table – 1- Mean scores and Standard deviation of responses

	N	Minimum	Maximum	Mean	Std. Deviation
Enjoying the role as a Quality Control Member	40	3.00	5.00	4.3000	.64847
Recommend others to join the circle	40	2.00	5.00	3.9000	.77790
Interpersonal relations improved	40	3.00	5.00	4.0750	.52563
Contribution to process improvement	40	4.00	5.00	4.5500	.50383
Problem solving has become more effective	40	3.00	5.00	4.3250	.65584
Quality Circle contributions positive to the organization	40	4.00	5.00	4.2250	.42290
Company appreciates Quality circle efforts	40	3.00	5.00	4.1000	.44144
Increase in efficiency	40	4.00	5.00	4.7750	.42290
Increase in mutual trust	40	3.00	5.00	4.1500	.53349
Increase in communication with supervisor	40	2.00	5.00	4.2500	.83972
Valid N (list wise)	40				

*(* 1- Strongly Disagree, 2- Disagree, 3- No Opinion, 4- Agree, 5- Strongly Agree)*

capacity of the member. Table 2 throws light on the result of the test.

Table 2 - Correlations between Association with the circle and problem solving capabilities

		Your association with the circle	Problem solving has become more effective
Your association with the circle	Pearson Correlation	1	.966
	Sig. (2-tailed)	.	.020
	N	40	40
Problem solving has become more effective	Pearson Correlation	.966	1
	Sig. (2-tailed)	.000	.
	N	40	40

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

Table 2 shows that there is a very significant correlation of .966 (0.01 significance level) between the length of circle membership and problem solving capabilities of the workers.

Kruskal Wallis Test is employed by me to statistically check whether the impact of the quality circle on enhancing efficiency is similar to all the respondents. The respondents were divided into two groups on the basis of their gender. Group 1 consisted of the male respondents and Group 2 consisted of female respondents. The following two hypotheses were formulated for the test:

H₀- The median is same regarding the response relating to the impact of Quality Circle on enhancing the efficiency.

H₁- The impact of quality circle on efficiency is different for the two groups.

Ranks

	Gender	Number	Mean Rank
Increase in Efficiency	Male	22	20.27
	Female	18	20.78
	Total	40	

Test Statistics

	Value
Chi-Square	.056
Df	1
Asymp. Significance	.812

The significance level is so high (.812) that we do not reject the null hypothesis. In other words it can be said that there is no reason to believe that the responses of the two groups on the impact of quality circle on efficiency differ significantly.

Major Findings of the Study

A detailed analysis of the primary and secondary data reveals the following findings:

1. The environmental changes occurring due to globalization, information technology, quality control, work force diversity and ethics are posing challenges as well as opportunities.

2. The human element in organization has become an important component in the long term survival of the organization.

3. Organizational development is one of the most significant developments in the field of organational behavior in recent years.

4. Quality Circles are innovative organizational intervention mechanism specifically designed to develop a spirit of cooperation, mutual trust and cooperation. It supplements employees with authority and hierarchical role with knowledge and skill.

5. Workers are enjoying the role as quality circle members.

6. Quality circle has improved the interpersonal relations in the organization.

7. There is notable increase in the efficiency and mutual trust of the quality circle members.

8. Quality Circle has enhanced problem solving capabilities and communications among the quality circle members.

Conclusion

The dynamic business engagements have resulted in the genesis of new innovations in management. New work place, internationalization, advanced information technology, total quality to customers and recognition and management of diversity and ethics represents a paradigm shift. The technological and human components of work are inextricably blended. Jobs are less tightly defined and programmed and the contingent workers comprise a significant proportion of the workforce. Similarly there is a significant change in the work approach with teams rather than individuals produce the basic units of work. Team's mission, goal achievement, feelings of empowerment, communications and the positive roles and norms are the key areas of a group approach. This shift is characterized by new rules, new boundaries and new pattern of organizational behavior. These changes and emerging paradigms require a new perspective and an application of human behavioral side of management.

Quality circle is one such innovative management tool which is used by major corporate giants to improve quality, communication, job involvement, and effective decision making. Quality Circles are problem solving techniques involving a group of employ-

ees who meet regularly to solve work place problems. The study reveals that participation in quality circles had positive results in the communication, interpersonal relations, problem solving capabilities and efficiency.

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Social Entrepreneurship in Healthcare Sector in India: An Analysis

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Abstract

World is full of social issues and problems such as access to food, water, sanitation, education and healthcare, which are affecting especially poor strata of population of the world. One of the social issues those needs urgent attention is to provide quality healthcare services to the needy people. Governments of respective countries are expected to resolve these problems and issues. But governments are finding it challenging to resolve these issues especially of provision of quality healthcare due to resource constraints. Social entrepreneurship is being increasingly recognized as a key element to address social problems in an innovative way. The present paper is an attempt to highlight the application of social entrepreneurship in healthcare sector in India by exploring different dimensions. This paper also draws attention to the most serious and unresolved problems in healthcare sector which may become the opportunities for passionate people, i.e., social entrepreneurs, to use entrepreneurial principles to resolve these issues.

Keywords

Social Enterpreneurship, Healthcare, Sustainablity

Social Entrepreneurship - An Introduction

Social entrepreneur is someone who recognises a social problem and uses entrepreneurial principles to organize, create, and manage a venture to make a social change. In contrast to business or commercial entrepreneurs who measure their performance in terms of profit and return, social entrepreneurs assess their success in terms of the impact they have on society. To put it in appropriate context, a social entrepreneur is a blend of values displayed in Mother Teresa's compassion for poor and deprived people, Warren Buffett's sharp business acumen and Steve Job's irresistible hunger for innovation. Social entrepreneurs are agents of change but with an entrepreneurial approach. They are focused on societal problem solving and not with making money. Making money is the secondary outcome of bringing about a change in people's lives which remains the primary objective and expected outcome. Social entrepreneurs seek fundamental changes in delivery systems and demonstrate a strong commitment to collaboration and co-creation with the

community and other stakeholders. It takes time and way too much persever-ance when one is aiming for sustainable change in society. Social entrepreneurs reach one milestone and there is something else waiting to be done after that. Scale up and success in case of social venture is not possible without passion, perseverance and persistence and hence, the role of Entrepreneur takes centre stage.

Conceptual distinction from other similar Social Sector welfare/engage-ment Models

Social Entrepreneurship is different from 'Social Service Provision', 'Social activ-ism', 'Non-governmental Organizations' (NGOs)/philanthropy organizations and 'Corporate Social Responsibility' (CSR). In case of 'Social Service Provision', a courageous and committed individual identifies an unfortunate stable equilib-rium and sets up a programme to address it. For example, a school which ensures that AIDS orphans in a particular geographic area are cared for and educated. But if it is not designed to achieve large scale then it would enable few of them to break free from poverty and transform their lives. Besides scalability, limitation is non-creation of imitators and replicators. In contrast to this, a social activist attempts to create change through indirect action, by influencing others such as governments, NGOs, consumers, workers, etc to take action. For example, Kailash Satyarthi recognized the inherent limitations of his work to rescue children enslaved in rug-weaving trade in India. The RugMark certification programme was created and a public relations campaign was designed to educate consumers who unwittingly perpetuate an unjust

equilibrium. Now, purchasing a carpet that has the RugMark label assures buyers that their carpet has been created without child slavery and under fair labour conditions. In this way, he transformed the entire carpet-weaving industry. It can be observed that the actions of the standards-setting organi-zation itself has not created societal change but those who are encouraged to forced to abide by the standards take the actions that produce the actual societal change. Another social engagement model is of NGOs or Philanthropy which has worked well so far as utilization of resources is con-cerned but has not worked when it comes to sustainable development. NGOs/philanthropy organizations run on donations rather than on self-generating cash flow. Corporate Social Responsibility (CSR) activities are additional activities performed by a business entity to discharge their social responsibilities for getting some mileage or building positive perception of society and government. Business entities do this through their social arm, e.g., founda-tion or by a NGO whose activities are in line with CSR policy of the company. This is different from Social Entrepreneurship as there are no direct profit-earning aspirations associated with the CSR activities.

Case in Point

Victoria Hale is face of social entrepre-neurship in healthcare in the world. Hale established her expertise in all stages of biopharmaceutical drug development at the US Food and Drug Administration (USFDA), Center for Drug Evaluation and Research and at Genentech, Inc., the world's first biotechnology company. She was a pharmaceutical scientist who

became increasingly frustrated by the market forces dominating her industry.

In the beginning, she was ridiculed when pharmaceutical chemist Victoria Hale told friends and colleagues that she wanted to start a nonprofit pharma company, they laughed at her, said it was career suicide, that it couldn't be done. In 1998, she wrote a business plan, gathered seed money, and with persistent efforts, she was able to set up the Institute of One World Health. But the venture was primarily dependent on philanthropy as majority of the funding came from Melinda Gates Foundation.

So, she started another venture, i.e., non-profit pharmaceutical company namely Medicines360 (formed in the year 2009 through an initial grant). She believes that profits are a means to a mission, not a motive. Medicines360 exists to meet the contraceptive needs of all women. By incorporating Medicines360, she wanted to build on a new model that would create even greater independence from for-profit pharmaceuticals. As reproductive health is becoming an increasingly important concern in developing countries but pharmaceutical companies are often reluctant to pursue these projects because of low profit margins. So, she ventured in this domain as Hale believes that increasing the availability of contraceptives can address three essential issues, i.e., women's rights, health, and economics.

Medicines 360 will run on a unique hybrid funding model. It will have a commercial sector price, which will move through the US by the traditional marketing pathway. And it will provide the same product, sold at a significantly reduced price, to the public sector, to women are uninsured, or to other programs. The profits generated by the for-profit arm in the US will be used to fund the global health efforts of the non-profit arm. The hybrid model is expected to be self-sufficient, and will ideally divorce the company from the need to secure investor funding. It further aims to become self-sustaining over time, using revenue from sales of its products at a premium price in the West to subsidize the same products for those who can't afford them in developing countries. The Company is currently developing an intrauterine device (IUD) for contraception. The Company's model is an all-in-one non-profit, social enterprise and pharmaceutical company.

Hence, 'Social Entrepreneurship' model holds promise to deliver in same way with effective utilization of scarce resources.

Social Entrepreneurship and Healthcare Sector in India - Introduction

Social sector schemes implemented by governments of various economies and states fail to achieve elusive social healthcare objectives as well as efficiency. Social entrepreneurship in healthcare domain is supplementing the efforts of governments and also helps in achievement of healthcare objectives along with efficient utilization of resources. It is bridging the gap and failure of work of governmental and philanthropic organizations. Social entrepreneurship model is different from market-based, price-driven models which submit more readily to data-driven interpretation. Social entrepreneurship merits more rigorous, serious attention than it has attracted so far due

to its' vitality to the progress of societies as is entrepreneurship to the progress of economies.

Healthcare Sector in India needs Social Entrepreneurship

India's healthcare system in many respects is on life-support. On one extreme, a public health system is entirely free but of poor quality if it is accessible. On other extreme, a largely unregulated private sector system provides world-class service to some but charges exorbitant prices which also suggests inappropriate or unnecessary care. It is also full with practitioners with little or no formal medical training. In this background, a slew of entrepreneurs are plugging the market gap. Due to lack of reliable public health services and non-affordability of health insurance, poor section of society has to spend heavily on private medical care, thereby driving them into poverty trap. It is because, out-of-pocket health expenditure accounts for nearly one-sixth of India's poverty burden. It can be observed from the fact that out of pocket payments (OPP) or direct cash expenditure by individuals/families for healthcare accounts for more than 70 per cent of the total health-related spending in India. At 1.4 per cent of the total GDP, India's government healthcare expenditure compares lowly against many developing countries. India contributes almost 21% of the global disease burden, losing at least 6% of its gross domestic product (GDP).

Failure of the government healthcare system can be gauged from the statistics, e.g., 93% of all hospitals, 64% of all beds, and 80%-85% of all doctors are from private sector. More so, informational asymmetry (patients don't have knowledge of treatment and diagnosis so possibility that they may be given unnecessary medicines or unwanted treatment by doctors) left patients to the mercy of private healthcare markets. The characteristics of the healthcare product and service market differ fundamentally in several ways from the usual competitive markets for other products. The possible solution to such market imperfections is a targeted public health care programme or a universal state-funded health care system. This requires investment and majorly funded by taxes and promotion of preventive care in collaboration with state government and private players in Public Private Partnership (PPP) model.

India's health care system is a hospital-driven one that ignores needs of preventive health care which can save lives and health costs of millions living in unsanitary and unhygienic conditions with achievement of healthcare matrix. India also does not have 'integrated preventive plus treatment' health care system involving food safety, water management, waste disposal, vector control, sanitation systems, health education and health regulations. Swachh Bharat Abhiyan can be a step in the same direction with making of toilets in each and every household of the country. However, it needs to be integrated with mainstream healthcare system.

From above, it is clear that complete socialistic way or pure capitalism will not be able to solve India's healthcare woes. India needs to have a hybrid system of healthcare management which may use entrepreneurial principles with an

eye on social objectives to achieve the better healthcare matrix.

Selective Ventures across the value chain in Healthcare Sector in India

Healthcare sector in India currently produces a very small number of profit-making entities. It has the lowest percentage (13%) of loss-making enterprises. Indian healthcare sector has the largest segment, i.e., 73%, of break-even businesses. As and when these enterprises begin to earn a profit, the healthcare sector would sustain a multitude of successful, profit-making enterprises. A social entrepreneur uses entrepreneurial principles to organize, create, and manage a venture to make change. However, to achieve that, one needs a distinguished plan or innovative business model, e.g., innovation that helps simplify and integrate medical procedures or even standardize administrative processes and medical protocols can help in bringing down healthcare costs.

Few examples of social entrepreneurship in healthcare sector are being listed in the table below which give hope to resolve serious and perennial healthcare problems in India. An interesting thing about these ventures is that each venture is unique and there is no "one size fits all" model in healthcare sector. Social entrepreneurs in these ventures adjust their approach to best fit local health priorities and customs.

Table 1: Selective Ventures in Healthcare domain in India

Segment	Venture
Low cost general Hospital	Vaatsalya Healthcare, Glocal Healthcare, G V Meditech, Jeevanti Hospitals, Swasth India, Healthpoint Services Pvt. India Ltd
Specialty hospital	Drishti Eye Care, Lifespring Hospital (maternity care), Visionspring, Vaatsalya, Ayzh, MyDentist, Address Health Clinic (Children), Smile Merchants, Narayana Hrudayalaya, Aravind Eye Care Hospitals, Jaipur Foot (Bhagwan Mahaveer Viklang Sahayata Samiti)
Alternative medicine	Swas Healthcare
Health Education and Training	Samhita Development Network, Bodhi Health Education
Technology services	Meradoctor, Ziqitza Healthcare, NewDigm, iKure, NeuroSynaptics, Welcare Health System
Medical device	Windmill Health, One Breath
Diagnosis	Biosense, Forus health, Elbit, Dhilcare, Arogya Ghar, Asian Health Alliance,
Research	Medicine 360 and Institute of One World Health
Low cost medicines	Jan Aushadhi scheme of Govt.

Source: Compiled from respective websites of these organizations

Social Ventures and Business Model: Business Model determines the sustainability of a social venture. Start-ups in India have begun to churn out prototypes and pilot projects aimed at this market, from inexpensive, life-saving, portable ventilators, to faecal incontinence devices to multi-use diagnostic and drug delivery devices that allow biopsies and targeted fine-needle drug delivery. Following table provides detail about selective social ventures and their business model:

Table 2: Social Ventures and their Business Model ensuring Sustainability

Social venture	Business Model
LifeSpring Hospitals	It has mall maternity hospitals (around 20 beds) in the periphery of a growing city through which it attracts low income, informally employed segment of a city's popula-tion. The company uses a long-term lease model to expand its portfolio. It provides a focused service basket which allows the hospitals to better manage a large volume of repeat procedures. The hospitals do not provide any frills such as air conditioning, private rooms or car parking and optimises its assets by sharing resources such as ambu-lance, back-end operations and staff.
VisionSpring	VisionSpring started its Hub & Spoke operations in 2012 in Karnal, India and expanded across the country in 2013. VisionSpring started stand-alone optical stores and associated with leading eye hospitals to set-up optical stores on their premises. VisionSpring also partners with eye hospitals for their community outreach activities in a variety of ways, including running its own mobile eye-screening and eyeglasses-dispensing units in rural areas.
Vaatsalya	It has the largest hospital network serving so-called tier-II and tier-III cities and towns in India
GV Meditech	Operates on a hub-and-spoke model to deliver healthcare services in UP, with the hubs being multi-specialty hospitals set up at the city level. These hospitals provide secondary and tertiary healthcare services to people living in and around the city. The spokes offer basic healthcare services at the village level through telemedicine centers, health camps, micro-clinics and ambulance services.
Swas Healthcare (Naturopathy)	Provides the services in tier II and III cities

Social venture	Business Model
Mera Doctor	It is delivering unlimited medical advice from licensed MBBS doctors to low-income families across India by telephone. The service is accessible 24 hours per day, seven days per week, and 365 days per year.
Ziqitza Healthcare	Ambulance services launched in 2005 in Mumbai. It is a paid service working on cross-subsidisation: the rich (those going to Leelavati or Breach Candy hospitals) pay more and the poor (those going to government hospitals) pay less. The service is free for the very poor and for accidents & emergencies.
Biosense	Developed a urine analysis system that can diagnose a range of conditions from diabetes, urinary tract infection and hepatitis based on snapshots of urine samples. Biosense app, e.g., U check app & TouchHb can reduce cost to just Rs 1000 for basic hardware.
Forus Health	A low-cost portable ophthalmology device, called '3nethra'. The device priced at one-sixth the cost of other devices can identify multiple diseases such as cataract, glaucoma, diabetic retina and refraction
Glocal Healthcare	Glocal spotted the business potential in a space - primary and secondary healthcare -- where organised private investments were conspicuously absent
Ayzh	Affordable women health kits with the help of technology
New Digm	A mobile-based Clinical Decision Support apps, real-time monitoring & tracking systems or training village health workers (VHW), they aim to be the new solution for democratizing access to quality and affordable healthcare through appropriate technology.
iKure	WHIMS (wireless health incident monitoring system) on rural areas. WHIMS is loaded on a computer/laptop and is made available to rural people on-field. Medical equipment is then interfaced with the software and related patient data are transferred in real time to a hospital/formal clinic-based doctor to advise and monitor the patient.

Social venture	Business Model
Samhita Development Network	A health education intervention
Elbit	Affordable diagnostics
NeuroSynaptics	Diagnostics - Tele-health consulting technology platform
Windmill Health	Offers low-cost technology innovations for healthcare sector. NeoBreathe, a low-cost neonatal resuscitation device for frontline health workers to resuscitate newborns.
MyDentist	First check-ups and X-rays are completely free. Then, when fitting a crown for instance, the patient is given all the options - from a Rs 900 metal cap to a Rs 3,000 ceramic one.
Jeevanti Hospitals	Offers medical facilities in under-served areas
Dhilcare	It is a mobility solution for doctors providing smartphone enabled 12 lead ECG solutions.
One Breath	Medical device startup OneBreath, which makes low-cost portable, rechargeable ventilators
Address Health Clinic	Address Health is a paediatric healthcare focused company that offers affordable preventive healthcare to children and their families
Smile Merchants	A dental clinic chain focused on markets outside the metro cities and follows hub-and-spoke clinic model
Welcare Health System	Screening devices are connected through the internet with certified ophthalmologists, who can then review and diagnose screenings remotely, greatly reducing the operating costs
Social Blood	Connect the blood donor and receivers on social networking site
Swasth India	Swasth India is a self-sustaining health system that provides one-stop access to healthcare to low-income people at half the market prices. Its services are delivered through a network of Swasth health centres

Social venture	Business Model
Karuna Trust	Manages eight Primary Healthcare Centres (PHC) in PPP model in India
Narayana Hrudayalaya	39 telemedicine centres to reach out to patients in remote rural areas. Together, the network of hospitals performs 32 heart surgeries a day, making it one of the busiest in the world. Almost half the patients are children and babies. Sixty percent of the treatments are provided below cost or for free.
SughaVazhvu	Implemented the IKP Centre for Technologies in Public Health (ICTPH) model for provisioning primary healthcare to remote rural Indian populations, through its rural primary healthcare network.
Aravind Eye Care Hospitals	Treatment is offered either free or heavily subsidized for the poor, who come from the remotest villages in the region. The hospital chain earns from the other half it serves: well-off folk who flock to it for its reputation for excellence in eye care.
Jaipur Foot	It is the world's largest organisation serving the disabled. This NGO (namely Bhagwan Mahaveer Viklang Sahayata Samiti) provides all its assistance, including artificial limbs, callipers and other aids and appliances totally free of charge
Bodhi Health Education	Provides medical education to community health workers using highly pictorial e-learning content delivered over platforms such as mobile tablets in offline mode, feature phones and through computers at locations with internet connectivity.
Arogya Ghar	Arogya Ghar program employs rural Indian girls, who are given inexpensive laptops that have diagnostic capabilities. These girls essentially act as the first line in medical care. Carrying the entire unit in a shoulder bag, they travel door-to-door in villages asking if anyone is sick, and perform diagnostic tasks using instructions on the computers. It offers girls career options and provides valuable vocational training in the field of healthcare.

Social venture	Business Model
Asian Health Alliance	A company that owns and operates affordable and high quality medical diagnostic facilities in low income semi-urban areas and rural areas across Karnataka under the brand name Asian Health Meter (AHM) at prices which are significantly lower than large, metro centric diagnostic chains
Arogya Finance	The firm lends between Rs 20,000 to Rs 2 lakh at 15-21 per cent interest rates. Borrowers also need to pay a one-time 2 per cent processing fee. The tenure depends on the borrower's need, but cannot exceed three years
Drishti	Drishti has taken some space where it posts optometrists, who will examine the patients who walk into the general practitioner's clinic for consultation. The optometrist examines the patient and recommends that he or she visit the hospital if further treatment is required. Drishti gives a percentage of the money it gets from these patients to the general practitioner, for the space and also for any patients that he or she may refer for consultation. Besides, it has a fully equipped van that tours remote villages and conducts eye camps.
Healthpoint Services India Pvt. Ltd.	Healthpoint Services' scalable and sustainable business model delivers preventive health care for just Rs. 100 per household. It provides rural Indian villages with clean drinking water, medicine (through a licensed pharmacy), more than 80 comprehensive diagnostic tools, and access to qualified medical technicians via two-way telemedicine services.

Source: Compiled from respective websites of these organizations and other sources

From above, it is clear that social entrepreneurs have a purpose in their life to contribute to people's life. Their passion helps them to stay afloat even if they face a number of difficulties and failures in running of their venture. They are recognizing a social problem, gaps in the various fundamental aspects of life and make it their purpose to bridge that gap with a social venture. They can't turn a blind eye to those problems like others. To find best suitable and low-cost healthcare solutions, a social entrepreneur needs to collaborate with the people or society that needs them the most. Also they need help of team of health workers to work smarter and harder to achieve the desired objectives.

Role of discipline of Finance and Cost Accounting with managerial emphasis in Social Entrepreneurship

The disciplines of Finance and Cost Accounting play an important role in success of Social Entrepreneurship. It is evident from facts related to successful social entrepreneurship ventures. For example, in case of Narayana Hrudyalaya of Dr. Devi Shetty, the model has been referred as the "Wal-Martization of healthcare" by Harvard Business School. Cross-subsidisation is widely applied in social entrepreneurial ventures. In the words of Dr. Devi Shetty, India may become the world's first country where healthcare will be dissociated from bank balance. His venture focused on the bottom of the pyramid. Even in case of Aravind Eye Care System, the model is self-sustaining one, whereby the free patient care is provided through the revenue generated from the paying patients without raising any donations from any sources. Dr. G. Venkataswamy (better known as 'Dr. V'), founder of Aravind Eye Care System also believed in providing basic eye care for the people irrespective of their financial status.

Cost reduction is visible in terms of hiring too. Dr. Devi Shetty has a team of 40-50 surgeons, some of them have been with him for over 25 years. Dr. Shetty believes that Narayana Hrudyalaya Private Ltd. (NHPL) will be able to hire from a larger, less expensive talent pool given the fact that India trains more diploma holders in specialties such anaesthesiology, gynaecology, ophthalmology and radiology. Dr. Shetty convinced a group of young entrepreneurs in Bangalore to make disposable surgical gowns and drapes so that he could buy them 60% cheaper. Further, cost containment is through tweaking processes, driving hard bargains and negotiating creative partnership deals. In case of **Aravind Eye Care System,** hospital has a well-trained battalion of ophthalmic assistants. These are young village women who are trained for 2 years to perform routine eye surgery. That approach allows Aravind's doctors to focus on diagnosis and the surgical procedure itself. It is also cost effective as in place of two, only one doctor is required for each surgery with two assistants helping him.

Volume is also a key driver. **NHPL** has also been referred as 'heart factory' by some international journals. Dr. Shetty explains that unless big hospital chains work with thin margins, like Wal-Mart did in retail, the cost of healthcare won't come down. In India, around 2.5 mn people require heart surgeries every year but all of the country's doctors put together perform only 80,000 to 90,000 surgeries a year. NHPL hospitals perform about 9,000 cardiac surgeries annually, which is 8-12% of the total heart surgeries performed in the country, and the group intends to take that share to 30% so that the average cost of heart surgeries in NHPL health cities is brought down from the present Rs. 60,000 to Rs. 40,000. NHPL plans to have 30,000 beds across the country to keep his prices low by cutting out unnecessary pre-op testing. Web-based computer software is used to run logistics, rather than licensing or building expensive new systems for each hospital. Technology is helping in reducing cost of healthcare and in bridging gaps of the health infrastructure. In the similar manner, **Aravind Eye Care System** has created a self-sustaining model by following an 'assembly-line approach'. India is home

to a quarter of the world's blind, and every year, at least 4 mn Indians develop cataract, the major cause of blindness. Aravind's doctors perform 2,000 surgeries a year versus the national average of 400.

NHPL is leveraging economies of scale, building large hospitals and attracting large number of patients through innovative schemes such as micro-insurance and telemedicine. He was instrumental in starting Yeshaswini, a micro health insurance scheme in Karnataka with a monthly premium of Rs. 5-7, which has insured at least 10 mn people. Later on, the state government wanted to pay the premium for all the below poverty line (BPL) cardholders. Higher volumes cut per unit cost of surgeries and for this, process innovation has been used. Dr. Shetty's next project is a smart card-based system to pay health insurance premium. On similar lines, Aravind Eye Care System has worked in eliminating preventable blindness. It is now a select member of the WHO collaborating Centre for Prevention of blindness. CDC has recently given $48 mn to Aravind Eye Care System to open more hospitals. After almost four decades of starting of venture, they are opening hospitals in other parts of the country and in the world.

Cash flows are always a problem as pointed out by Dr. Shetty due to the fact that over 50 per cent of the outstanding is from the government. NHPL has managed investment from other sources, e.g., Kiran Mazumdar-Shaw, Biocon founder, is a partner in Shetty's venture and invested her personal wealth in NHPL. Most doctors in big corporate hospitals earn their remuner-ation which is linked largely to the number of procedures they do. But in case of NHPL, doctors are employees; they do more surgeries only out of choice or as per hospital need. Dr. Shetty himself operates on at least two patients and then offers consultations to another 60-100 (some in person, and many through NHPL's extensive telemedicine network). In short, Dr. Shetty has managed to function as an astute business-man without letting go of the surgeon inside.

Contribution of Academia especially B-Schools in promotion of Social Entrepreneurship

This development has not left fresh graduates from reputed institutions especially from the world's leading B-schools like Stanford, Harvard, INSEAD, IIM, IIT etc uninfluenced and they are acting as change agents in some of the most promising social enterprises in the world at the moment. A specialized training is of paramount importance to create a pool of social entrepreneurs which is provided by these institutions. The following table provides synoptic view of contribution of selective institutions of repute in India in this domain:

Financing and Social Entrepreneurship:

Financing is an important aspect of social entrepreneurship which puts it in a different league. Primarily, the self-sustainability is ensured with the use of business model and self-generating cash flows. In addition to that, self-financing by promoters/founders, social impact investment, funding from donors, and funding from incubators especially as seed fund, are major sources. Impact funds have come up in

Table 3: Selective Indian institutions especially B-Schools and Social Entrepreneurship	
Institution	**Contribution to Social entrepreneurship**
IIMA	Professor Muhammad Yunus and Indian Institute of Management, Ahmedabad (IIM-A) joined hands to set up a Rs 50-crore fund to seed social ventures
IIMB	Organises an Annual event Prayaas: A Social Responsibility Initiative at the IIMB campus
IIMC	Organises TATA Social Enterprise Challenge which is a joint initiative by the TATA group and the Indian Institute of Management Calcutta
IIML	Centre for Business sustainability, IIM-Lucknow launched samRiddhi, a social entrepreneur initiative
IIMI	It has made social sensitivity an important part of its residential programmes, e.g., Rural Immersion Programme to the Indore Marathon, from school adoption to computer literacy programmes, students are exposed to social activities
IIMK	Indian Institute of Management Kozhikode (IIMK) organised a 6-day Management Development Programme (MDP) on Young Women Social Entrepreneurship Development Programme
ISB	Partner in Global Social Venture Competition to catalyze the creation of social ventures, educate future leaders and build awareness of social enterprises.
XLRI Jamshedpur	Hosts the Conference on Social Entrepreneurship every year
FMS	Organised introductory conference on social entrepreneurship in 2011
NMIMS	Conducts One Year Diploma Programme in Social Entrepreneurship and a Three Year Part Time MBA Programme in Social Entrepreneurship

Institution	Contribution to Social entrepreneurship
IIT M	The Centre for Social Innovation and Entrepreneurship focuses on teaching and research on social enterprise in India. Also it partners with Villgro Innovation Foundation which is social business incubator & Lemelson Foundation's program for social entrepreneur
IMT Ghaziabad	Centre for Rural Innovation, Capacity Building, Knowledge Management, (Social) Entrepreneurship and Technology (CRICKET)
Entrepreneurship Development Institute of India (EDI)	A six-month diploma course for the Social Entrepreneurship
Tata Institute of Social Sciences (TISS)	The two-year, full time, Master of Arts in Social Entrepreneurship (MA in SE) & also conducts the TATA Social Enterprise Challenge

Source: Compiled from respective websites of these institutions

a big way. Aavishkar, India's oldest impact fund, has been investing since 2001 which started as a non-MFI fund but expanded its portfolio to invest in education, healthcare and MFI. Social enterprises offer good returns as well. As pointed out by Vineet Rai, partner and MD, Aavishkaar, that in their case, they invest in early stage social enterprises which they either exit or never exit. And at the same time, they can get a return of 20%, 40% or even 100% from social enterprises. Impact investing firms, which invest to deliver social benefits alongside financial returns, have put $1.6 bn (more than Rs. 9,600 crore) into India since 2000, mostly in companies in sectors such as healthcare, micro-finance, and financial inclusion. This amount has been spread across roughly 220 enterprises, but 60% of the capital has gone to only 15 of them.

Concluding Remarks

The challenge for social enterprises will be to find the balance between profitability and social impact & efforts to make social enterprises financially sustainable would not jeopardise their goal of finding solutions for social issues and problems.

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Table 4: Selective List of Social Ventures funded by Social Venture Funds

Social Venture Fund/ Source of Funding	Social Venture
Aavishkaar	? Vaatsalya, ? GV Meditech, ? Swas Healthcare (Naturopathy) ? Mera Doctor
Acumen	? Drishtee, ? LifeSpring, ? Visionspring ? Ziqitza Healthcare
Bamboo Finance	? Vaatsalya Healthcare
Centre for Innovation, Incubation and Entrepreneurship (CIIE) of IIM-A	? Biosense ? Forus Health
Elevar Equity	? Glocal Healthcare
Ennovent	? Drishti Eye Care
Rural Technology and Business Incubator	? Ayzh ? New Digm
Unitus	? Samhita Development Network ? Forus Health
Ventureast	? Elbit ? NeuroSynaptics
Villgro	? Windmill Health ? Biosense
Omidyar Network	Many start up by IIT+AIIMS students
Seedfund	? Vaatsalya ? MyDentist ? Jeevanti Hospitals
Helion	? EyeQ

Table 4: Selective List of Social Ventures funded by Social Venture Funds

Social Venture Fund/ Source of Funding	Social Venture	
GSF	?	BioSense
	?	Dhilcare
Ventureast Tenet Fund & Angel investors like Rajiv Kuchhal and BVR Mohan Reddy	?	One Breath
Unitus Seed Fund	?	Address Health Clinic
	?	Smile Merchants
	?	Welcare Health System
Google India MD Rajan Anandan	?	Social Blood
Rattan Tata	?	Swasth India
Government and Other Donors	?	Karuna Trust
Equity funds JPMorgan and Pine Bridge	?	Narayan Hrudayalaya
IKP Centre for Technologies in Public Health (CTPH)	?	SughaVazhvu
Self-funded	?	Aravind Eye Care Hospitals
Bhagwan Mahaveer Viklang Sahayata Samiti and Donors	?	Jaipur Foot
TAKE Solutions	?	Bodhi Health Education
World Bank Development Marketplace Award	?	Arogya Ghar
Acumen	?	Asian Health Alliance
Self-funded	?	Arogya Finance
Lok Capital	?	Drishti

Source: Compiled from respective websites of funding organizations and social ventures

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Trend of Financial Inclusion in South Asia: A Cross Country Analysis with special reference to India

Arindam Laha

Abstract

Though the financial landscape of South Asia is highly diverse across countries, but shared a unique history of transformation of financial institutions from social banking experience to the development of access institutions. However, cross-country variations exist in including the excluded sections of the population under the formal financial institutions in South Asia. Does the variation across countries in financial indicators widened or narrowed down? Does it reflect a converging or diverging trend? To seek an empirical answer to these questions, attempts have been made in this paper to examine the trend of financial indicators across South Asian countries with a special reference to the Indian states. Empirical evidences in this paper suggest that the financial inclusion index broadly follows the converging pattern across South Asian countries. Thus countries having lower level of financial inclusion continue to converge with the higher levels in South Asia. On contrary, a diverging trend of index of financial inclusion index across states of India is exhibited in the post-reform period.

Introduction

The eight countries in South Asia[1] reflect a highly diverse landscape for financial inclusion each with a unique modern history of financial systems development (CGAP[2], 2014). The era of organized sector finance in much of South Asia (Bangladesh, India, and Pakistan) is generally acknowledged to have started with the Cooperative Credit Societies Act of 1904. However, throughout South Asia, cooperatives are generally seen as a failure (World Bank,

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1 *South Asia is the southern region of the Asian continent, which comprises the sub-Himalayan countries like Bangladesh, India, Sri Lanka, Pakistan, Nepal, Bhutan, Maldives, and Afghanistan. South Asia is comprised of over one fifth of the world's population, and thereby considered as the most populous and the most densely populated geographical region in the world. It is to be noted that the South Asian Association for Regional Cooperation (SAARC) is an economic cooperation organization in the region which was established in 1985 with the active cooperation of seven founding members, viz. Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. Later Afghanistan joined the organization in 2007.*

2 *CGAP (the Consultative Group to Assist the Poor) is a global partnership of 34 leading organizations that seek to advance financial inclusion. The mission of the group is to improve the lives of poor people by spurring innovations and advancing knowledge and solutions that promote responsible, sustainable, inclusive financial markets.*

2006). Some seven decades later, in the 1970s, it was still thought necessary to nationalize commercial banks through-out the region. The first experiment was made to launch microfinance in Bangladesh in the same year marked by the nationalization of commercial banks. Grameen Bank, Bangladesh Rural Advancement Committee (BRAC) and Self Employed Women's Association (SEWA) Bank's first experi-ments were under taken in the early 1970s (World Bank, 2006). In the twenti-eth century, South Asia is venturing into a new wave of branchless banking network and it is expected that it will alter the landscape for financial inclusion in South Asia in near future (CGAP, 2014). Under the circum-stances, attempts have been made in this paper to examine the cross-country variations in the level of financial inclusion and its trend in South Asia with a special reference to Indian states.

For convenience, the paper is divided into five sections. The next section reviewed the existing literature on the measurement and trend of financial inclusion. Data and methodology section considers some of the method-ological issues relating to the construc-tion of Index of Financial Inclusion (IFI) and sigma convergence. Related data sources are also mentioned in this section. The section followed next examines the trend of financial inclusion in South Asian countries in general, and India in particular. The concluding remarks are presented in the last section.

Literature Review

In the literature on the measurement of financial inclusion the most commonly used indictors are the number of bank accounts (per 1000 adult person), number of bank branches (per million people), number of ATMs (per million people), amount of bank credit and amount of bank deposit. These indica-tors provide only partial information on the inclusiveness of the financial system of an economy. To construct an interna-tionally comparable database of financial access, a broad set of indica-tors for measuring financial access are constructed at the initiative of World Bank (2005). Indicators were broadly divided into two dimensions: the institutional dimension and the func-tional dimension. The institutional dimension of measuring financial inclusion rested on three broad institu-tions: banks and bank like institutions, other formal financial institutions and informal financial institutions. On the other hand, the functional dimension of measuring financial access identified three important financial services: transactions or payment services, savings (deposit) services and loan or credit services. It has been suggested that these indicators would form a core component of more extensive surveys of household financial access. In an important contribution to the existing literature, Sarma (2008) attempted to fill this gap of knowledge by proposing a comprehensive index of financial inclusion to examine cross-country variation in financial inclusion across 55 countries of the world. This comprehen-sive index considered three basic dimensions of an inclusive financial system, banking penetration, availability of the banking services and usage of the banking system. Based on the empirical evidences, it was argued that a large number of economies, including several industrial economies have low levels of financial inclusion. This paper identified

several country specific factors indicating socio-economic factors, factors relating to physical infrastructure and banking sector factors that are associated with the level of financial inclusion. The empirical analysis suggested that the level of income of the country, income inequality, adult literacy, urbanization, physical and electronic connectivity and information ability, proportion of non performing assets in banking sector, capital asset ratio, and foreign ownership in the banking sector are significant factors in explaining the level of financial inclusion of a country. This index has been widely been used in the existing literature to examine the variation of financial inclusion across the countries of the world, among the states of a country and the districts of a state (Mehrotra et al, 2009; Kumar & Mishra, 2011; Pal & Vaidya, 2011; Kuri & Laha, 2011a, 2011b; Chottopadhyay, 2011). However, only a very few attempts have been made to understand the concept of financial inclusion both from the perspectives of demand for and supply of financial services (Kumar & Mishra, 2011; Laha & Kuri, 2014). It has been observed that the demand for financial inclusion is considered to be a powerful correlates of the supply of financial inclusion.

Even though, several studies dealt with inter-regional disparity in human development and economic growth in the existing literature (Dholakia, 2003; Ramirez et al, 1998; Sala-i-Martin, 1996), but the issue of convergence or divergences of financial indicators have not received much attention. In an ever first attempt in the existing literature, Pal & Vaidya (2011) examined the trend of regional convergence in the penetration of financial services across Indian states. However there are other financial indicators like availability and usage of financial services, which have a significant bearing on financial inclusion in a region. This paper is intended to fill this gap of knowledge. Specifically the study would like to address different aspects of financial inclusion (i.e. penetration, availability and usage of financial services) so as to examine the trend of financial inclusion across South Asian countries with a special reference to Indian states.

Data and Methodology

Construction of Index of Financial Inclusion:

An attempt has been made in the paper to construct a comprehensive measure of financial inclusion that can able to incorporate information on several dimensions of financial inclusion (following Sarma (2008)). To review the performance of South Asian countries in the progress of financial inclusion, a comprehensive index of financial inclusion using Euclidian distance method is constructed on the basis of Financial Access Survey database (International Monetary Fund (IMF)) over the period 2004-13. Four individual dimensions of financial inclusion, viz. number of commercial bank branches per 100,000 adults, number of commercial bank branches per 1000 km2, outstanding deposits with commercial banks (% of Gross Domestic Product (GDP)), and outstanding loans from commercial banks (% of GDP) have been selected. It is to be noted that the missing values of individual dimensions in the available database on financial inclusion for South Asian countries during 2004-13 is estimated by a linear trend method.

Similarly, IFI across Indian states are estimated by considering three dimensions of financial inclusion: penetration (number of bank accounts as a proportion of the total adult population), availability (number of bank branches per 1000 adult population) and usability

of financial services (volume of credit and deposit as proportion of the state's Net State Domestic Product). Three dimensions for measuring IFI of Indian states and their data sources are presented in table 1.

Table 1-Description of the Dimensions of Financial Inclusion and its Associated Data Sources

Dimension	Description	Data sources
Banking penetration	Number of bank accounts as a proportion of the total adult population	Basic Statistical Returns (Reserve Bank of India (RBI)), 1994, 2005, 2012; Census of 2001, 2011.
Availability of banking services	Number of bank branches per 1000 adult population	Basic Statistical Returns (RBI), 1994, 2005, 2012
Usage of the banking system	Volume of credit and deposit as proportion of the state's Net State Domestic Product	Basic Statistical Returns (RBI), 1994, 2005, 2012; Economic Survey (Government of India) various years.

The IFI is measured by the normalized inverse Euclidean distance of the dimension indices from their ideal values. In the first place, we have calculated the dimension index for each dimension of financial inclusion. The dimension index for the ith dimension, d_i, is computed by the following formula

$$d_i = \frac{A_i - m_i}{M_i - m_i} \qquad \text{---------- (1)}$$

Where A_i = actual value of dimension i, = minimum value of dimension i, M_i = maximum value of dimension i. Unlike UNDP Goal Post Method of calculating prefixed values for minimum and maximum values, this study has used empirically observed minimum and maximum values for each dimension. Here it can be seen that $0 \le d_i \le 1$. Higher the value of d_i, higher the achievement

of a region in dimensions i. By considering the above three dimensions, any region can be represented by a point (d_1, d_2, d_3) in three-dimensional Cartesian space, such that $0 \le d_1, d_2, d_3 \le 1$. In the three dimensional Cartesian space, the point (0, 0, 0) indicates the worst situation and the point (1, 1, 1) indicates the best or ideal situation. The IFI is measured by the normalized inverse Euclidean distance of the point (d_1, d_2, d_3) from the ideal point (1,1,1). Algebraically,

$$IFI = 1 - \sqrt{\frac{(1-d_1)^2 + (1-d_2)^2 + (1-d_3)^2}{3}} \quad \text{----------- (2)}$$

In the formula (2) we have considered three dimensions for estimating IFI values of Indian states. Similarly, in the construction of IFI for South Asian Countries, four dimensions are considered. Depending on the value of IFI, regions are categorized into three categories. Region with a

IFI value below 0.2 are considered to have a low level of financial inclusion, those in between 0.2 to 0.5 a medium level, and those above 0.5 a high level.

Convergence Analysis

Following Barro & Sala-i-Martin (1992), we have utilized convergence and divergence methods to explain the trend of financial inclusion indicators across the countries of South Asia and Indian states over time. The concepts of ? convergence is said to exist if the dispersion of any financial inclusion indicator ($D_{i,t}$) across regions decreases over time. This implies a tendency of financial inclusion to be equal across region over time, i.e $\sigma_{i,t+\tau} < \sigma_{i,t}$ where $\sigma_{i,t}$ is the standard deviation of log ($D_{i,t}$) across region i in time t.

Trend of Financial Inclusion

Experiences from South Asian Countries

Though the landscape of financial development is diverse across countries of South Asia, however, the experiment with inclusive finance has well rooted historical connections in this continent of the world. The success of micro-finance revolution can be traced to its origin in forty years back, when Grameen Bank in Bangladesh started its operation in providing subsistence finance to those excluded sections of the society. To experiment with social banking development policy, a supply lending approach has been adopted by the countries of the region. Some of the government interventions in addressing supply side bottlenecks were nationalizing private banks, prescribing branch regulations, placing interest rate ceilings on credit to low-income households, and providing credit at subsidized rates to priority sectors etc (Sangmi, 2013). A transition from social banking policy to the development of access institutions in the backdrop of financial liberalization regime was noticeable in the present times.

Development of inclusive financial system through expansion of commercial banking network was observed to be a common policy prerogative shared by most of the South Asian countries. Based on Financial Access Survey of IMF, an attempt has been made in this section to examine the progress of financial inclusion across countries of the region. Table 2 presents a comparative analysis on four important dimensions of financial inclusion across South Asian countries.

IFI value has improved for all countries in the region with the highest rate of improvement in Afghanistan. However, the ranking of the countries in the financial inclusion index in 2013 suggests that the index value is still lowest in Afghanistan, while it is highest in Sri Lanka and then followed by the Bangladesh, India and Maldives. Moreover, recently only Sri Lanka, Bangladesh and India are in the category of 'high financial inclusion', while Maldives, Nepal and Bhutan are in the category of 'medium financial inclusion'. All other remaining two countries are included in the classification of 'low financial inclusion'.

Sigma convergence in the level of financial inclusion in South Asia is said to have achieved if the dispersion (mea-

Table 2- Index of Financial Inclusion across South Asian Countries, 2004-13

Year	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
2004	0.001 (8)	0.629 (2)	0.476 (5)	0.555 (3)	0.806 (1)	0.335 (7)	0.450 (6)	0.551 (4)
2005	0.025 (8)	0.644 (2)	0.457 (6)	0.580 (3)	0.786 (1)	0.338 (7)	0.461 (5)	0.577 (4)
2006	0.064 (8)	0.658 (2)	0.477 (5)	0.591 (4)	0.691 (1)	0.343 (7)	0.446 (4)	0.634 (3)
2007	0.100 (8)	0.668 (2)	0.500 (5)	0.594 (4)	0.759 (1)	0.383 (7)	0.462 (6)	0.641 (3)
2008	0.135 (8)	0.673 (2)	0.497 (5)	0.590 (4)	0.669 (1)	0.412 (7)	0.442 (6)	0.668 (3)
2009	0.171 (8)	0.680 (1)	0.468 (5)	0.595 (3)	0.499 (4)	0.417 (7)	0.441 (6)	0.671 (2)
2010	0.187 (8)	0.669 (1)	0.451 (6)	0.609 (3)	0.566 (4)	0.455 (5)	0.428 (7)	0.681 (2)
2011	0.136 (8)	0.657 (2)	0.459 (6)	0.608 (4)	0.613 (3)	0.479 (5)	0.400 (7)	0.693 (1)
2012	0.212 (8)	0.655 (3)	0.453 (6)	0.608 (4)	0.703 (1)	0.481 (5)	0.414 (7)	0.697 (2)
2013	0.234 (8)	0.637 (2)	0.407 (6)	0.567 (3)	0.498 (4)	0.483 (5)	0.399 (7)	0.684 (1)

Source: Authors calculation based on Financial Access Survey (2004-2013), IMF

Note: The figures in the parenthesis indicates the rank of the corresponding country.

sured by standard deviation) in the index of financial inclusion across countries of the region declines over time. Table 3 indicates that the pattern of standard deviation of the logarithms of index of financial inclusion is gradually declines overtime from a very high value of 0.968 in 2004 to a significantly low value of 0.147 in 2013. Thus empirical evidences established a converging trend in the financial inclusion index overtime across South Asian countries. All other individual dimension indices are following a similar trend of convergence across the countries (Figure 1). Overall, it can be said that countries having lower level of financial inclusion continue to converge with the higher levels in South Asia.

Figure 1- Convergence of IFI and Its Four Dimesions in South Asia
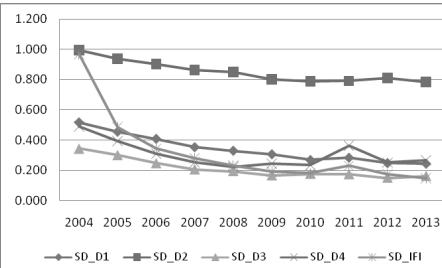
Indian Experience

Despite a progressive development in the access of financial services, significant proportions of the poor and disadvantageous population are still

Table 3-Results of Convergence Analysis

Year	SD_D1	SD_D2	SD_D3	SD_D4	SD_IFI
2004	0.517	0.996	0.343	0.490	0.968
2005	0.455	0.938	0.301	0.394	0.485
2006	0.409	0.902	0.247	0.309	0.343
2007	0.354	0.862	0.206	0.253	0.280
2008	0.330	0.849	0.195	0.221	0.233
2009	0.307	0.800	0.166	0.244	0.192
2010	0.269	0.789	0.176	0.235	0.181
2011	0.284	0.790	0.174	0.362	0.230
2012	0.250	0.809	0.150	0.250	0.174
2013	0.245	0.782	0.162	0.267	0.147

Source: Authors calculation based on Financial Access Survey (2004-2013), IMF.

excluded from the formal financial institutions in India. In this context, it is thus imperative to examine the inter-state variation in the progress of financial inclusion across states of India. In the analysis of the trend of financial inclusion for 17 major states of India, three reference time periods are considered: 1993-94[3], 2004-05 and 2011-12 (Table 4).

It is evident that IFI varies between 0.646 in case of Himachal Pradesh and 0.017 in case of Assam in the year 1993-94. However, in the year 2004-05 (2011-12),

IFI varies between 0.662 in case of Punjab (0.590 in case of Punjab) and 0.023 in case of Assam (0.001 in case of Bihar). The state, Himachal Pradesh, belong to the group of high financial inclusion secures a ranking of first (in 1993-94), third (in 2004-05) and fifth (in 2011-12) in the ranking of IFI. The state, Punjab, secures first in the ranking of IFI in both the reference periods of study, 2004-05 and 2011-12. Among the better off States in respect of the level of financial inclusion, Himachal Pradesh, Punjab, Kerala and Karnataka Haryana and had a IFI value of above 0.5 in 1993-

Table 4- Index of Financial Inclusion for a Few Selected Indian States

State	1993-94	2004-05	2011-12
Andhra Pradesh	0.266 (11)	0.285 (10)	0.396 (9)
Assam	0.017 (16)	0.023 (17)	0.075 (16)
Bihar	0.256 (12)	0.070 (16)	0.001 (17)
Gujarat	0.328 (8)	0.316 (9)	0.294 (10)
Haryana	0.336 (7)	0.328 (8)	0.416 (8)
Himachal Pradesh	0.646 (1)	0.529 (3)	0.485 (5)
Jammu & Kashmir	-	0.490 (5)	0.432 (7)
Karnataka	0.549 (4)	0.507 (4)	0.574 (2)
Kerala	0.558 (3)	0.588 (2)	0.521 (4)
Madhya Pradesh	0.318 (10)	0.170 (14)	0.157 (14)
Maharashtra	0.389 (6)	0.451 (6)	0.528 (3)
Odisha	0.101 (15)	0.103 (15)	0.20 6 (13)
Punjab	0.627 (2)	0.662 (1)	0.590 (1)
Rajasthan	0.186 (14)	0.186 (13)	0.143 (15)
Tamil Nadu	0.421 (5)	0.379 (7)	0.438 (6)
Uttar Pradesh	0.235 (13)	0.214 (12)	0.209 (12)
West Bengal	0.319 (9)	0.215 (11)	0.229 (11)
All India	----	0.328	0.365

Source: Authors calculation on IFI is based on Basic Statistical Return of Scheduled Commercial Banks (RBI)

1993, 2004, 2012; Economic Survey, 2004-05, 2009-10, 2013-14.

3 *In 1993-94, 16 major states are considered to overview the state of financial inclusion in India. The state, like Jammu and Kashmir, is excluded in the analysis of 1993-94 due to non-availability of adult population data in the census 1991.*

94. A similar listing of states in high IFI category was found in 2004-05. States, like Maharashtra were included in the category of better of states in the year 2011-12. At the other end, states like Rajasthan, Odisha and Assam had IFI values less than 0.2 in the year 1993-94. Bihar and Madhya Pradesh were included in the group of low level of financial inclusion state in the year 2004-05. The situation more or less remains same in 2011-12, as the IFI comprises of four states only.

In the context of India, the trend of financial inclusion indicators has been examined by using the concept of sigma convergence considering 17 major states of India over 1993-2011. It is said that sigma convergence has been achieved if the dispersion (measured by standard deviation) of the logarithms of financial inclusion indicators across countries of the region declines over time. Table 3 indicates that the esti-mated value of standard deviation of the logarithms of IFI remains more or less same at 0.38 during 1993-94 to 2004-05, and then it significantly reaches to very high value of 0.680 in 2011-12 (Table 5). Thus empirical evidences exhibits a diverging trend in the IFI overtime across Indian states. However, individual dimension indices do not following a uniform trend of convergence or divergence across the states. For example, while penetration indicator of financial inclusion reflects a converging trend overtime, but an opposite diverging trend is visible for availability dimension. Usability dimension do not represents any clear trend of conver-gence or divergence (Figure 2). Overall, based on the composite index, it can be said that states having lower level of financial inclusion do not converges

Table 5- Results of Convergence Analysis

Year	SD_D1	SD_D2	SD_D3	SD_IFI
1993-94	0.146	0.097	0.140	0.384
2004-05	0.139	0.115	0.145	0.381
2011-12	0.113	0.146	0.134	0.680

Source: Authors calculation based on different dimensions of IFI

with the better-off states in India, rather the disparity in the progress of financial inclusion has been widened overtime. These observations are also consistent with the existing literature, which explored a diverging trend of outreach of banking services across states of India in the post-reform period (Pal & Vaidya, 2011).

Figure 2- Convergence of IFI and Its Four Dimesions in India
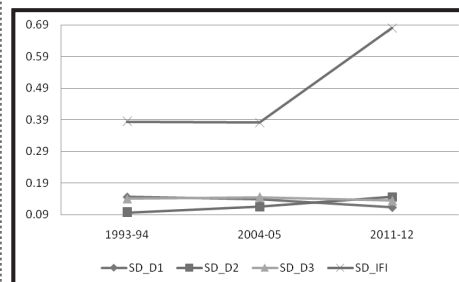
Conclusions and Policy Implications

The paper sheds some lights on the measurement and trend of financial inclusion across South Asian countries with a special reference to the Indian states. Measurement of financial inclusion suggests that Sri Lanka, Bangladesh and India belongs to the

category of 'high financial inclusion', while all the other countries are either included in the 'medium financial inclusion' (Maldives, Nepal and Bhutan) or 'low financial inclusion' (Afghanistan and Pakistan). Interestingly, sigma convergence analysis suggests that countries having lower level of financial inclusion continue to converge with the higher levels in South Asia. In the context of India, states are actually diverging from each other in the progress of financial inclusion overtime. A deeper insight into the problem of divergence in financial inclusion suggest that necessary policy action needs to be take towards outreach of the banking institutions in the remotest corner of the country. The latest initiative of RBI to enhance financial inclusion through opening up full-fledged banks, payment banks and small banks is expected to address the problem of regional disparity in the years to come.

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Value Relevance of Intellectual Capital in Indian Pharmaceutical Sector : Does Size of Firm Matter?

Santi Gopal Maji

Mitra Goswami

Abstract

In an economy dominated by creation and diffusion of knowledge, intellectual capital is gradually being recognized as the crux for value creation and as a key factor of enhancing the competitive position of a firm. The present study is a modest attempt to unveil the influential ability of intellectual capital on financial performance of large and small firms in Indian pharmaceutical sector during 1999-2000 to 2012-2014. Employing panel data regression and quantile regression, the study finds that intellectual capital has a positive impact on the financial performance of both large and small firms. Nonetheless, the influence is significantly higher in case of large firms than in small firms. The results also indicate that the financial performance of small firms largely influenced by utilization of intellectual resources rather than physical resources. In contrary, for large firms both physical and intellectual capital play crucial role in enhancing firm performance and creating significant gap between market value and book value. Among the components of IC, the impact of HCE is positive and significant for both the firm groups. However, the study fails to disentangle any significant influence of SCE on the financial performance of small firms.

Introduction

The business world of the late 20th century witnessed a paradigm shift in the role of knowledge for value creation from 'know-what' kind of knowledge as in industrial society to the '*creation and diffusion of knowledge*'. This transition of economy from industrial age to post-industrial, knowledge-based era has altered the relative importance of economic parameters where the symbolic resources are supplanting the traditional physical and financial resources as the core contributor of value creation. The dawn of new economy has paved the way for the development of an emerging knowledge-based theory (Grant and Baden-Fuller, 1995), which draws upon the resource-based view of the firm

(Penrose, 1959; Wernerfelt, 1984; Burney, 1991) and other research streams like epistemology, organizational learning, capabilities and innovation (Burton-Jones, 1999). Consequently, enormous recent research studies has centered on the management of intangible resources encompassing human capital, structural capital and relational capital under the rubric of intellectual capital (IC)[1] for enhancing sustainable competitive advantage of an enterprise (Edvinsson and Malone, 1997; Lev, 2001; Clarke et al., 2011). Although there is no universally accepted definition of intellectual capital, there is a general consensus among the researchers on its basic parameters such as knowledge, experience, skill, innovation, processes, relationships and technology (Stewart, 1997). These intangible forces are engendering the significant gap between market value and book value of a firm (Lev, 2001) and heralding the crux for achieving the competitive position of a firm.

Enormous research efforts have been made by researchers to shed light on the impact of IC on the financial performance of firms across industries and countries around the globe covering both developed and developing once. Plethora of empirical studies has employed value added intellectual co-efficient (VAIC) model developed by Pulic (2000) for measuring IC and its two components - human capital (HC) and structural capital (SC). Empirical evidence, however, remains inconclusive, although a significant number of researchers have demon-

strated the positive role of IC on value creation. While some researchers (Chen et al., 2005; Tan et al. 2007; Clarke et al., 2011; Mondal and Ghosh, 2012; Joshi et al., 2013) have observed positive influence of IC on firm performance, others (Firer and Williams 2003; Gan and Saley 2008; Muhammad and Ismail, 2009) have found negative or insignificant impact of IC and its components on the firms' market value. On the other hand, the findings of Samiloglu (2006), Kamath (2008) and Mehralian et al., (2012) indicate that there is no significant association between IC and firm performance. These contradictory findings are attributed owing to divergence in research premise, sample size, measurement of variables and empirical models.

Given the increased importance of managing intellectual resources for entrepreneurial success in a knowledge-based economy, researchers delved deeper into exploring the invisible forces of IC on firm performance. However, it is surprising that a comparative analysis of the influence of IC on the performance of large and small enterprises is scanty in the extant literature. Most of the researchers have investigated the issue in large organizations leaving out small-to-medium enterprises (SME) or by blending all firms (large, medium and small) under one umbrella. In case of SMEs some researchers have attempted to explore the knowledge management practices (Beijerse, 2000; Wong, 2005; Montequin et al., 2006) as well as the growth of SMEs (Choueke and Armstrong, 2000). However, empirical studies investigating the influence of IC on the performance of SMEs are very limited (Salojarvi et al., 2005). Management of knowledge-based

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1 The terms "intellectual capital", "intangible assets", "knowledge assets", "intellectual assets", "intangible capital" and "intangible resources" are interchangeably used in the extant literature (Edvinsson and Malone, 1997; Lev, 2001; Bontis et al., 1999).

resources is a continuous cycle of three interrelated elements: knowledge creation, knowledge dissemination and knowledge acquisition (Burton-Jones, 1999). Given the creation and application of knowledge as the engine of organizational performance and growth, practically, the capacity and efficiency of large and small firms in managing intellectual resources for value creation cannot be the same.

Large firms' posses certain inherent advantages over small business in acquiring intangible resources due to their greater amount of financial resources. They have the capacity to recruit highly knowledgeable and expertise human resources by offering higher compensation package, deploy more advanced technologies and incur considerable expenditure for research & development for enhancing firm performance. In contrast, small firms face the challenges of attracting highly skilled employees, registering patents, incurring large amount of expenditure on research & development due to their lack of financial capital and limited access to the credit market as compared to large firms. However, extant literature indicates that the size of small firms can be advantageous in managing the human resources because of its flat organization structure that facilities for continuous interaction, promotes healthy atmosphere and persuades creativity and cooperation among employees (McAdam and Reid, 2001; Desouza and Awazu, 2006; Ngah and Ibrahim, 2009). Likewise, due to small size, these firms can respond quickly to any changes (both internal and external) and can maintain a close relationship with their clients and suppliers. Eventually, flexible, informal,

less bureaucratic and favourable for internal knowledge sharing organization structure of small firms facilitates to generate more innovations per unit of financial capital as compared to large firms (OECD, 2010). Despite of limited resources, some authors (Cabello and Kekale, 2008; Jardon and Martos, 2009) argue that the performance and growth of small and medium enterprises (SMEs) are largely influenced by their intellectual capital.

The contradictory theoretical views about the management of different components of IC along with limited number of studies examining the relative influence of IC on the performance of large and small enterprises offers an appropriate platform to address the issue with appropriate methodology. The present effort is a modest attempt to find out the answers of some pertinent questions in the context of Indian pharmaceutical sector: is there any significant difference between the book value and market value of large and small firms over the years? What is the role of physical and intellectual capital in the value creation of large and small firms? Which component of intellectual capital is the most vital in influencing firm performance? Is there any significant difference on the value creating ability of intellectual capital between large and small firms? To address the research questions, the specific objectives of the study are:

1. To look into the gap between market value and book value of large and small firms over the study period.

2. To investigate the influence of physical and intellectual capital on the performance of firms selected for this study.

Tentatively, following research hypotheses have been formulated for empirical testing:

H_1: *The gap between market value and book value is significantly higher in large firms than in small firms*

H_2: *Intellectual capital efficiency is positively associated with financial performance of both large and small firms.*

H_3: *Physical capital efficiency is positively associated with financial performance of both large and small firms.*

H_4: *The influence of the components IC on the performance of both large and small firms is positive.*

H_5: *The impact of intellectual capital efficiency on the financial performance of large and small firms is significantly different.*

The rest of the paper has been organized as follows:

Section 2 presents the data and methodology adopted in this study. Section 3 highlights the gap between market value and book value. Section 4 is devoted for analyzing the impact of IC on firm performance followed by concluding remarks in section 5.

Data and Methodology

Data and study period

Secondary data on 58 listed companies belonging to Indian pharmaceutical sector[2] have been collected from 'Capitaline plus' corporate database for a period of 15 years from 1999-2000 to 2013-2015. Indian pharmaceutical sector has been selected for this study because it is the largest knowledge-based sector in India and third largest in the world in terms of sales volume[3]. This sector has immense contribution to the Indian GDP registering a compound annual growth rate (CAGR) of around 13 percent during the last few years. Moreover, the large number of listed firms in this sector helps to achieve the objectives of the study.

Classification of firms

For segregating the selected firms into large and small, two popular measures of firm size used in the existing literature - quantum of total sales and market capitalization have been employed here. Average quantum of sales and market capitalization over the study period has been considered as the basis for ranking the selected firms in ascending order. Finally, the firms with average quantum of sales or market capitalization in excess of 66th percentile of the distribution have been classified as large firms. On the other hand, firms with average sales or market capitalization up to 33rd percentile of the distribution have been categorized as small firms. Employing both the measures of firm size, indeed, very high degree of similarity (rank correlation coefficient is found to be around 0.94) has been observed. Hence, any one of the two approaches can be considered. Nevertheless, firms'

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2 *Initially all the listed companies available in the database have been considered for this study. However, excluding all missing data, finally 58 companies have been selected to develop a balanced panel.*

3 *"Pharma to topple IT as big paymaster". The Economic Times. 8 June 2010*

classification based on market capitalization has been used in this study for empirical analysis.

Definition of variable

Response variable

The response (dependent) variable of this study is firm's financial performance. For measuring firms' financial performance both accounting-based and market-based measures have been used. The most widely used accounting-based measure of firm performance in the existing IC literature is the return on assets (ROA) (Firer and Williams, 2003; Chen et al., 2005; Clarke et al., 2011). ROA in the present context has been defined as the ratio of earnings before interest and tax (EBIT) and total assets. On the other hand, market to book ratio (MBR) has been computed to reflect the firm's performance in the market. MBR has been calculated by dividing market capitalization by book value of net worth, where market capitalization is the product of year end share price and number of equity shares.

Explanatory variables

Value Added Intellectual Coefficient (VAIC): VAIC methodology developed by Pulic (2000) has been employed to calculate value added intellectual coefficient (VAIC) and the components of VAIC. VAIC methodology embraces the concept of resource-based view that discerns the influence of both tangible and intangible resources for value creation. In the process of computing VAIC, the first step is to determine the ability of a firm to produce value added (VA) which is the difference between output and input.

Output in this model has been defined as the total revenue generated by a firm in a year and input is the summation of all operating expenses incurred by the firm in earning revenue except employee costs which are considered as a value creating factor (Clarke et al, 2011). From accounting perspective, VA can be expresses as:

$$VA = EBIT+D+A+EC \qquad \text{....(i)}$$

Where, EBIT= Earnings before Interest and Tax; D= Depreciation; A= Amortization (if any) and EC= employee cost.

Following additive principle, VAIC is the composite sum of capital employed efficiency (CEE) and intellectual capital efficiency (ICE). Further, ICE is the summation of two components of IC - human capital efficiency (HCE) and structural capital efficiency (SCE). This follows:

$$VAIC = CEE + ICE = CEE + HCE + SCE$$
$$\text{....(ii)}$$

Capital Employed Efficiency (CEE): CEE is the indicator of physical capital efficiency in this model and has been defined as: CEE = VA/CE … (iii); where CE is the book value of net assets of a firm.

Human Capital Efficiency (HCE): HCE reflects the efficiency of the human capital (HC) in generating added value. HC is the heart of creating IC (Chen et al. 2005) and encompasses skill, experience, know-how, knowledge and effectiveness of employees. HC has been defined as payment of salaries and wages to employees at a point of time (Pulic, 2000). Thus,

HCE = VA/HC   ....(iv)

Structural Capital Efficiency (SCE): Structural capital is the supportive infrastructure comprises of organizational routines, procedures, systems, intellectual properties, culture and databases etc. that remains within the firm when employees go home (Edvinson and Malone, 1996). In VAIC methodology SC has been defined as the difference between VA and HC, i.e., SC = VA - HC and

SCE = SC/VA   ... (v)

Finally, the **intellectual capital efficiency (ICE)** has been computed as:

ICE = HCE + SCE   ...(vi)

Leverage (LEV) defined as the ratio of debt and total asset has been used as the control variable in this study.

Empirical models

To investigate the influence of IC and other explanatory variables on firm performance panel data regression model has been employed in this study. Appropriate panel data regression model has been identified with the help of two widely used tests - Breusch-Pagan test and Hausman test. Initially Breusch-Pagan test has been used to find out whether the data are poolable or not; where the null hypothesis is that the variance of the unit-specific error is zero. If the null hypothesis is not rejected, the test result advocates in favour of pooled OLS or constant co-efficient regression model. On the other hand, if the probability of the asymptotic test statistic of the Breusch-Pagan test is sufficient to reject the null hypothesis,

fixed or random effect regression model can be used based on the outcome of Hausman test. The test results are shown in the respective table. The test results advocate infavour of fixed effect regression model when the response variable is ROA. On the other hand, for studying the impact on M/B ratio, pooled OLS or constant coefficient model has been found to be more appropriate for the present data set.

The functional form of the fixed effect regression model is:

$$Y_{it} = (\beta_1 + \alpha_i) + X_{it}\,\beta + \upsilon_{it},$$

where $\upsilon_{it} \sim$ IID N $(0, \sigma\upsilon^2)$ and α_i is the henterogeneity effect.

Similarly, the general structure of the pooled OLS model is:

$$Y_{it} = \alpha + X_{it}\,\beta + \mu_{it}, \text{ where } \mu_{it} \sim \text{IID N } (0, \sigma\mu^2)$$

The following specific fixed effect regression models have been used in this study for examining the impact of IC and other explanatory variable on ROA:

$$ROA_{it} = \beta_{1i} + \beta_2\,VAIC_{it} + \beta_3\,LEV_{it} + \upsilon_{it} \quad ...(Eq.1)$$

$$ROA_{it} = \beta_{1i} + \beta_2\,CEE_{it} + \beta_3\,ICE_{it} + \beta_4\,LEV_{it} + \upsilon_{it} \quad ...(Eq.2)$$

$$ROA_{it} = \beta_{1i} + \beta_2\,CEE_{it} + \beta_3\,HCE_{it} + \beta_4\,SCE_{it} + \beta_5\,LEV_{it} + \upsilon_{it} \quad ...(Eq.3)$$

Likewise, the following pooled OLS models have been employed to investigate the impact on market to book ratio (MBR):

$$MBR_{it} = \beta_{1i} + \beta_2\,VAIC_{it} + \beta_3\,LEV_{it} + \upsilon_{it} \quad ...(Eq.4)$$

$$MBR_{it} = \beta_{1i} + \beta_2 CEE_{it} + \beta_3 ICE_{it} + \beta_4 LEV_{it} + \upsilon_{it} \qquad \ldots(Eq.5)$$

$$MBR_{it} = \beta_{1i} + \beta_2 CEE_{it} + \beta_3 HCE_{it} + \beta_4 SCE_{it} + \beta_5 LEV_{it} + \upsilon_{it} \qquad \ldots(Eq.6)$$

The above models have been employed to explore the relative influence of IC and other explanatory variables on the two measures of firm performance for both large and small firms separately. On the other hand, to investigate whether the influence of ICE on the performance of large and small firms is significantly different or not, following methodology has been adopted for the combined data set. Initially the influence of size as a categorical variable on the financial performance has been measured by introducing a dummy variable with the help of the following equation:

$$Y_{it} = \propto + \beta_1 D_{it} + \varepsilon_{it} \qquad \ldots(Eq.7)$$

Where D is the dummy variable that takes the value 1 if the firm is large and 0 if it is small. Y is the measure of firm performance and ? is the error term. Then the explanatory variable ICE has been introduced in the equation (7) to control the influence of intellectual capital on firm performance and the following regression equation has been employed:

$$Y_{it} = \propto + \beta_1 ICE_{it} + \beta_2 D_{it} + \varepsilon_{it} \qquad \ldots(Eq.8)$$

The estimated coefficient of the dummy variable of equation 8 along with the change in the explanatory power of the two equations (7 and 8) would indicate if there is any significant difference between the firm groups relating to the impact of ICE on firm performance.

Gap between Market Value and Book Value: Large and Small Firms

From the late 1980s the observed widen gap between book value and market value of firms stimulated the attention of researchers to look for the 'hidden factors' that the classical accounting system have failed to explain accurately (Edvinsson and Malone, 1997; Lev, 2001). These invisible forces or hidden factors have been attributed as the result of intellectual capital (Andriessen, 2004). Arguing in a similar vein, Edvinsson (1997) defined intellectual capital as the 'gap between market value and book value'. This is also justified by the findings of Ocean Tomo's Intangible Asset Market Value Study (2010)[4] which reported that, the share of intangible assets in the market value of S&P 500 firms which was only 17% in 1975, increased to 68% in 1995 and further to 80% in 2005. However, the extant literature is not sufficient enough to justify the role of IC in creating significant gap between BV and MV in case of small and medium firms.

To achieve the first objective of the study, the over the years average gap between market value and book for both large firms and small firms have been computed and the results are shown in figure 1 and 2 respectively for large and small firms. A cursory look into the figure 1 reveals that there is an increasing trend of the gap between MV and BV for large firms' throughout the study period barring two periods (2008 and 2009). This tentatively can be attributed as the effect of global financial crisis. On the other hand, in

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4 Ocean Tomo's Intangible Asset Market Value Study, 2010, available from www.oceantomo.com. Intangible-Asset-Market-Value-Study.

case of small firms, the figure 2 shows a fluctuating trend over the years. It is also evident from the figure that that in most of the study period the gap was found to be negative. Interestingly, when the gap for large firms sharply inclined during 2010 - 2014, for small firms it shows a declining trend during that period.

Fig. 1 Movement of Gap between MV and BV

Fig. 2 Movement of Gap between MV and BV
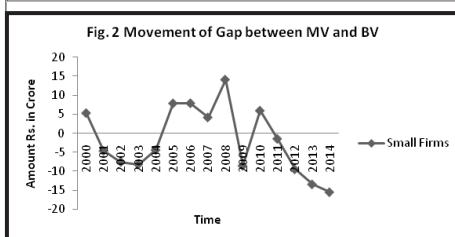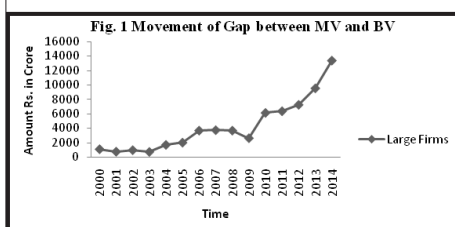
Although the graphical presentation of the movement of gap between MV and BV undoubtedly demonstrate the significant difference between large and small firms, statistically the difference has been tested with the help of two sample t-test. The observed value of t-statistic is found to be 4.4307, which is significant at 1 percent level. The figures as well as the statistical test, thus, advocates in favour of accepting our first hypothesis (H1), i.e. the gap between market value and book value is significantly higher in large firms than in small firms.

Based on the observed movement of the gap between MV and BV, a growth oriented non-stationary time series model (probably in a quadratic form) can be fitted for large firms. In case of small firms, a stationary time series model seems to be more appropriate. However, these are beyond the scope of this paper.

IC and Financial Performance of Large and Small Firms

Distribution of Variables

The descriptive and robust statistics of four major variables of the study namely ROA, MBR, ICE and CEE are shown in table 1. Specifically we are interested to explore the empirical distribution of the two response variables - ROA and MBR used in this study. Near equality of the values of mean, 5% trimmed mean and median indicates the symmetrical distribution of the variables, otherwise the distribution is said to be skewed. A cursory look into the table reveals that the observed mean, 5% trimmed mean and median statistics of MBR are considerably different for both large and small firms. The values of skewness also demonstrate the lack of symmetry and longer right tail. Nevertheless, as compared to MBR, the distribution of ROA is less skewed for both the groups. It is also evident from the table that the mean values of ICE and CEE for large firms are higher than those of small firms. But the distribution of ICE in case of small firms is to a large extent positively skewed.

Empirical Results

The standard linear regression using the least square approach is one of the oldest and most widely used statistical tools for summarizing the average relationship between the response (dependent) variable and a set of regressors. This method, however, may

Table 1. Distribution of variables

Firm	Variables	Mean	5% Trimmed Mean	Median	Skewness
Large	ROA	0.173	0.171	0.168	0.949
	MBR	5.002	4.699	3.505	7.856
	ICE	4.424	4.338	4.021	0.196
	CEE	0.390	0.369	0.363	2.988
Small	ROA	0.077	0.075	0.075	1.366
	MBR	2.198	1.045	0.695	9.638
	ICE	3.688	3.162	2.581	12.626
	CEE	0.291	0.266	0.252	1.412

Source: Calculated by the authors from the data set

provide biased view of the relationship if the distribution of the response variable is skewed. The results of summary statistics (table 1) exhibit that the distribution of the response variables, specifically for MBR, is far away from symmetry. Hence, the regression models based on conditional mean function as proposed in section 2.4 (equation 1 to 6) may not provide correct result. In order to obtain more acceptable result for the present data set, we have employed Quantile regression model introduced by Koenker and Bassett (1978). Quantile regression at 50th percentile ($\tau = 0.5$), which is a special case of least absolute deviation (LAD), gives a robust estimate of the coefficient as the estimated coefficient vector is not sensitive to the outliers of the response variable (Buchinsky, 1998). Moreover, if the error term is non-normal, estimators of quantile regression may be more efficient that least square estimators.

Let (Y_i, X_i), i = 1,2,…N be a sample from some population, where X_i is a K ×1 vector of regressors and Y_i, is the response variable, the quantile regression model can be expressed as:

$$Y_i = \beta_{\tau,0} + \beta_{\tau,1}X_{2i} + \cdots + \beta_{\tau,k}X_{ki} + \epsilon_i^{\tau}$$

$$= \underline{x}'\underline{\beta_{\tau}} + \epsilon_i^{\tau}$$

Where, the conditional τ-quantile $Q_{\tau}(Y_i|X_{1i}, \ldots X_{ki})$ of Y_i is a linear function of regressors $X_{1i},\ldots,X_{ki}$. For a given quantile τ, β is estimated by minimizing $\frac{1}{n}\sum_{i=1}^{n} \rho_{\tau}(y_i - \underline{x}'\underline{\beta_{\tau}})$ Although the range of τ is 0 to 1, in this study median value or $\tau=0.5$ has been taken into consideration as an alternative to mean regression.

The empirical results of quantile regression have been displayed along with the results of panel data regression in table 2 and table 3.

Influence of intellectual capital on ROA

Table 2 shows the results of fixed effect regression and quantile regression of equations 1, 2 and 3 for both large and small firms. A cursory look into the table reveals that the overall influence of VAIC on ROA employing fixed effect regression model is positive and significant at 1 percent level (equation 1). On the other hand, LEV is negatively associated with the financial performance of both large and small firms. This is consistent with the proposition of the pecking order hypothesis that a profitable firm uses less debt for financing activities. The observed values of adj. R^2 and F-statistic advocate in favour of the regression models employed here. The coefficient estimates of robust regression technique, quantile regression, also demonstrate that the results of fixed effect regression model are tenable.

It has also been observed from the table that the coefficient of ICE is positive and significant at 1 percent for both large and small firms. Likewise, the influence of CEE is positive for both the cases. This implies that both physical and intellectual capital have significant impact on enhancing firms' financial performance. This is consistent with the proposition of RBV of the firm and the findings of some earlier researchers. However, a careful scrutiny of the observed influence of CEE and ICE on the ROA reveals that the impact of physical capital (CEE) is found to be relatively more in case of large firms than the influence of intellectual capital (ICE)[5]. On the other hand, relative impact of ICE is more for small firms. The implication is that for a small firm the financial performance depends to a great extent on the utilization of intellectual resources due to their limited physical and financial resources. The results of quantile regression also demonstrate the same.

In order to find out the influence of the two components of IC, human capital (HC) and structural capital (SC) on ROA, equation 3 has been employed. The results indicate that the impact of HCE on ROA is positive and the estimated coefficients are significant at 1 percent level for both large and small firms. Nonetheless, contradictory results are found regarding the influence of SCE on ROA. While the positive impact of SCE on ROA is significant in case of large firms, such association is found to be insignificant for small firms. This insignificant association may an indication of non-availability of supportive infrastructure owing to limited financial resource that helps to create and leverage knowledge. However, observed larger impact of HCE than CEE in case of small firms justifies the benefits of flatter and less bureaucratic structure that facilitates the creation and diffusion of the efficiency of human resources for value creation.

Since the outcome of the fixed effect model is consistent with the result of quantile regression, it may be argued that the observed results are dependable. Moreover, the very high explanatory power and significant F-statistic for

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5 This argument is based on the observed values of t-statistic. Alternatively, the greater impact can be detected from the standardized coefficient of the explanatory variable.

all the equations indicate the goodness of fit of the regression model used in the present context.

Impact of intellectual capital on MBR

The empirical results relating to the impact of VAIC and its components on MBR of large and small firms are shown in table 3. As already mentioned, the outcome of Breusch-Pagan test advocates in favour of pooled OLS method, this method has been employed to estimate the coefficients for equations 4, 5 and 6. For robust check, the results of quantile regression are presented along with the outcomes of pooled OLS. The pooled OLS estimates of equation 1 depict that the observed coefficients of VAIC and LEV are insignificant for both large and small firms. Further, the explanatory powers of the models are almost negligible and F-statistics are also insignificant. Likewise, the estimated coefficients of equation 4 and 5, barring a few cases, statistically insignificant and the explanatory power of the models are also very less. Since, the estimated coefficient vector of classical mean regression (OLS) is sensitive to outliers observations on the dependent variable and as it has already been observed from the summary statistics (table 1) that the distribution of MBR is far away from symmetry, we suspect the reliability of the results of the pooled OLS model. Hence, for analysis purpose the results of quantile regression at 50th percentile, which fits median to a linear function of covariates, have been taken into consideration.

A cursory look into the results of quantile regression shown in table 3 reveals that the coefficient estimates of VAIC is positive and significant for both large and small firms. Similarly, the outcomes of equation 5 clearly points out the positive role of ICE and CEE in enhancing the market value of the firms. The observed results thus signify that the performance of a firm in the market depends on the efficient utilization of both physical and intellectual resources. Again, the estimated coefficients of equation 6 indicate that the influence of HCE and SCE on MBR is positive for both large and small firms, although results are not statistically significant in case of SCE. The observed insignificant influence of SCE on firm performance in the present context is consistent with the findings of Firer and Williams (2003), Samiloglu (2006), Gan and Saley (2008), Kamath (2008) and Clarke et al (2011). The earlier researchers have also pointed out the inefficiency of the VAIC model in capturing structural capital component of IC. However, the significant positive impact of HCE on MBR certainly advocates the crucial role of IC in value creation. This is practically true in case of small firms where the influence of HCE is comparatively more than that of CEE in enhancing the market value of the firm. For large firms, nevertheless, the influence of both physical capital (CEE) and human capital (HCE) on MBR is almost identical.

Relative influence of ICE on large and small firms

Equation 7 and 8 has been employed for the combined data set to study the relative role of ICE on the performance of large and small firms. Accounting-based measure of firm performance, i.e. ROA has been considered here as the estimated coefficients employing this measure of firm performance provide

Table 2. Regression results of equation 1, 2 and 3

Equation	Firms	Variables	Fixed Effect Regression Model				Quantile Regression Model	
			Coeff.	t-stat	Adj.R²	F-stat	Coeff.	t-stat
1	Large	Constant	0.144	9.43***			0.176	30.66***
		VAIC	0.014	16.45***	0.551	18.421***	0.009	19.77***
		LEV	-0.203	-3.17***			-0.245	-12.68***
	Small	Constant	0.004	0.76			0.022	2.82***
		VAIC	0.021	39.27***	0.867	94.14***	0.019	23.10***
		LEV	-0.025	-2.10**			-0.048	-2.98***
2	Large	Constant	-0.083	-6.65***			-0.028	-6.16***
		CEE	0.608	25.26***	0.864	86.94***	0.417	50.85***
		ICE	0.006	9.61***			0.012	51.02***
		LEV	-0.018	-0.49			-0.031	-3.15***
	Small	Constant	-0.003	-0.61			-0.029	-6.78***
		CEE	0.056	6.81***	0.876	96.38***	0.208	32.34***
		ICE	0.020	35.74***			0.017	38.97***
		LEV	-0.023	-2.01***			-0.027	-3.30***

Contd.

3	Large	Constant	-0.088	-6.68***			-0.071	-12.99***
		CEE	0.610	25.31***	0.864	83.22***	0.409	45.61***
		HCE	0.006	9.39***			0.006	24.94***
		SCE	0.014	2.02**			0.107	32.00***
		LEV	-0.024	-0.67			-0.034	-3.16***
	Small	Constant	0.004	0.62			-0.030	-5.36***
		CEE	0.056	6.90***	0.879	95.21***	0.209	26.44***
		HCE	0.020	36.37***			0.018	32.59***
		SCE	0.006	1.37			-0.001	-0.14
		LEV	-0.019	-1.66*			-0.014	-1.35

Notes: ***, **, and * indicate significant at 1%, 5% and 10% level. Dependent variable: ROA

Panel data test results for large firms:

Breusch-Pagan test: Asymptotic test statistic - Chi-square = 6.381883* for equation 1; 95.9688*** for equation 2 and 89.9899*** for equation 3.

Hausman test: Asymptotic test statistic - Chi-square = 5.07176* for equation 1; 83.7052*** for equation 2 and 101.781*** for equation 3.

Panel data test results for large firms:

Breusch-Pagan test: Asymptotic test statistic - Chi-square = 390.538*** for equation 1; 230.427*** for equation 2 and 225.397*** for equation 3.

Hausman test: Asymptotic test statistic - Chi-square = 7.6704** for equation 1; 22.1336*** for equation 2 and 18.1237*** for equation 3.

Table 3. Regression results of equation 4, 5 and 6

Equation	Firms	Variables	Pooled OLS Model				Quantile Regression Model	
			Coeff.	t-stat	Adj.R²	F-stat	Coeff.	t-stat
4	Large	Constant	82.750	1.272			3.595	15.34***
		VAIC	-6.874	-0.584			0.089	4.69***
		LEV	41.461	0.343	0.001	0.213	-4.463	-5.64***
	Small	Constant	2.645	3.298**			0.614	10.75***
		VAIC	-0.018	-0.218			0.028	4.70***
		LEV	-1.263	-0.778	0.001	0.319	-0.133	-1.15
5	Large	Constant	-359.121	-3.878***			-0.096	-0.16
		CEE	815.490	6.854***			6.528	5.99***
		ICE	4.706	0.358			0.201	6.64***
		LEV	472.657	3.071**	0.135	15.76***	0.157	0.12
	Small	Constant	2.013	2.359			0.460	8.34***
		CEE	2.489	1.947*			0.783	9.47***
		ICE	-.058	-0.662			0.014	2.51**
		LEV	-1.097	-0.679	0.005	1.471	-0.145	-1.39

6	Large	Constant	-369.944	-3.944***			-0.275	-0.41
		CEE	817.137	6.860***			6.529	5.87***
		HCE	3.154	0.229	0.132	11.84***	0.172	5.54***
		SCE	29.44	0.603			0.590	1.43
		LEV	462.203	2.975**			0.197	0.15
	Small	Constant	2.175	2.408**			-0.030	-5.36***
		CEE	2.466	1.914*			0.209	26.44***
		HCE	-0.062	-0.681	0.003	1.194	0.018	32.59***
		SCE	-0.352	-0.520			0.001	0.146
		LEV	-0.992	-0.603			-0.014	-1.35

Notes: ***, ** and * indicate significant at 1%, 5% and 10% level. Dependent variable: MBR
Panel data test results for large firms:
Breusch-Pagan test: Asymptotic test statistic - Chi-square = 0.982843 with p-value 0.321for equation 4: 0.62734 with p-value 0.428 for equation 5 and 0.60024 with p-value 0.438 for equation 5.
Panel data test results for small firms:
Breusch-Pagan test: Asymptotic test statistic - Chi-square = 0.59627 with p-value 0.440 for equation 4: 1.9251 with p-value 0.165 for equation 5 and 1.9203 with p-value 0.165 for equation 6.

Table 4: Regression results of equation 7 and 8						
Equation	Variables	Unstd. Coefficient	Std. Coefficient	t-statistic	Adj. R²	F-statistic
7	Constant	0.081		9.31***		
	D	0.100	0.323	8.12***	0.103	66.07***
8	Constant	0.021		3.33***		
	ICE	0.016	0.701	26.01***	0.590	410.42***
	D	0.079	0.257	9.52***		

Notes: *** indicates significant at 1% level by two tailed test. Dependent variable - ROA

more nuanced view of the relationship (table 2). The results of equation 7 and 8 are shown in table 4.

The table shows that the coefficient of dummy variable in equation 7 is positive and significant. This indicates that, as a categorical variable, the impact of large firm is significantly higher than small firms in influencing ROA. Again, such influence is also found to be positive and significant after controlling the impact of ICE (results of equation 8). Further, the explanatory power of the model 8 has increased considerably (from 0.103 in eq. 7 to 0.590 in eq. 8). Since the differential profitability is better explained in equation 8, the results indicate that the impact of ICE on ROA for large firm is significantly greater than that of small firms.

Concluding Remarks

The present study is a modest attempt to explore the value creating ability of intellectual capital in enhancing the financial performance of selected large and small firms in the Indian pharmaceutical sector during 2000-2014. The findings of the study indicate that the gap between MV and BV of large firm is significantly greater than that of small firms. By employing appropriate panel data regression model and quantile regressions model, the study finds that both physical capital and intellectual capital positively and significantly influence the performance of large and small firms. But while the influence of physical capital is more in case of large firm, the financial performance of small firms depends to a great extends on the efficient utilization of intellectual resources. Nonetheless, the results

reveal that the relative influence of ICE in improving firms' profitability is significantly higher for large firms as compared to small firms. The study also finds that the impact of HCE is positive and significant for both the firm groups. However, the influence of SCE is not significant for small firms. The results, thus, support the alternative hypotheses H_1, H_2, H_3, H_5 and partly H_4.

The present study has also paved up the scope for further research. The observed MV and BV gap for both large and small firms has revealed an interesting pattern that can be categorized periodically into three phases. As depicted in figure 1, for the period 2000-2004, the movement of gap between MV and BV for large firms showed an increasing trend, whereas in case of small firms the trend was observed to be decreasing. Again during the period 2005-2009, the movement was observed to be stagnant till the year 2008 which was followed by a sharp decline in the year 2009 in case of large firms, while, in the case of small firms the movement was observed to be increasing till the year 2008 after which there was a sharp decline in the year 2009. Also, while an increasing trend was observed during the period 2010-2014 for large firms, but during the same period the trend was declining for small firms. The role of IC in these three phases for both large and small firms can be explored with the help of an appropriate methodology.

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About The Institute

The Institute of Cost Accountants of India (ICAI) is a statutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrols students for its courses, provides coaching facilities to the students, organises professional development programmes for the members and undertakes research programmes in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants increasingly contributing towards the management of scarce resources like funds, land and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

After an amendment passed by Parliament of India, the Institute is now renamed as "The Institute of Cost Accountants of India" from "The Institute of Cost and Works Accountants of India". This step is aimed towards synergising with the global management accounting bodies, sharing the best practices and it will be useful to large number of trans-national Indian companies operating from India and abroad to remain competitive. With the current emphasis on management of resources, the specialized knowledge of evaluating operating efficiency and strategic management the professionals are known as "Cost and Management Accountants (CMAs)". The Institution operates through four regional councils at Kolkata, Delhi, Mumbai and Chennai and 96 Chapters situated at important cities in the country as well as 9 Overseas Centre headquartered at Kolkata. It is under the administrative control of Ministry of CorporateAffairs, Government of India.

Our Institute apart from being a member of International Federation of Accountants (IFAC), South-Asian Federation of Accountants (SAFA), Confederation of Asian & Pacific Accountants (CAPA), National Advisory Committee on Accounting Standards (NACAS), and National Foundation for Corporate Governance (NFCG) is also a member of Government Accounting StandardsAdvisory Board (GASAB).

Detailed Guidelines for Contribution in 'Research Bulletin'

► The Research Bulletin (ISSN No. 2230-9241) is an official research publication of The Institute of Cost Accountants of India.

► The authors must declare that the article is the result of their faithful work.

► The article should preferably be relating to the original research work carried out during the last five years and not being considered for publication in any other research publication or journal.

► The manuscript including figures, table & references should be preferably within 5000 words for Research Papers including an abstract, 2000 words for Case Studies and 1000 words for Book Reviews.

► Soft Copy of the full paper should be submitted in double space, 12 fonts, Times New Roman, keeping a margin of 1 inch in four sides, MS Word 2003 (.doc) format.

► The Cover Page should contain the title of the paper, author's name, designation, official address, contact phone numbers, e-mail address.

► An abstract of not more than 150 words should highlight the findings of the research work. It should be in clean, unambiguous and concise English. Abbreviations should be avoided in the abstract.

► Title should be short, specific and informative.

► The main text should not contain name of the author and footnotes. References should be given at the end of the manuscript and should contain only those cited in the text of the manuscript.

► 5-6 key words suitable for indexing should be given in the alphabetical order.

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► Two hard copies and one soft copy (in MS Word format) of the manuscript are to be sent.

► The contributions sent for publication are referred for blind review. Correspondence and proofs for correction, if required, will be sent to the first named author unless otherwise indicated. Corrected proofs should be returned within the specified days as may be communicated from Editorial Desk.

► The final decision on the acceptance or otherwise of the paper rests with the Editorial Board and it depends entirely on its standard and relevance. The final draft may be subjected to editorial amendment to suit the bulletin's requirement.

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► The contributors will receive the structured honorarium fixed by the Institute.

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The Institute of Cost Accountants of India

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Call for Research Papers/Articles :

We invite you to contribute research paper/ article for "Research Bulletin", a peer-reviewed Quarterly Journal of The Institute of Cost Accountants of India. The aim of this bulletin is to share innovative achievements and practical experiences from diverse domains of management, from researchers, practitioners, academicians and professionals. This bulletin is dedicated to publish high quality research papers providing meaningful insights into the management content both in Indian as well as global context.

Research Bulletin is now a Quarterly Publication of the Institute. The next issue will be published in October, 2015.

Guidelines to submit full Paper :

♦ Soft Copy of the full paper should be submitted in double space, 12 font size, Times New Roman, keeping a margin of 1 inch in four sides, MS Word 2003 (.doc) format.

♦ Each paper should be around 15 typed pages and preferably within 5000 words including all.

♦ An abstract of not more than 150 words should be attached.

♦ The cover page should contain the title of the paper, author's name, designation, official address, contact phone numbers, e-mail address.

Papers are invited on the following topics, but not limited to :

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♦ Investment Scenario of Manufacturing Industries in India

♦ Health Insurance among Rural Population

♦ Impact of Social Media in Indian socio-economic perspective

Papers must be received **within 1st September, 2015** in the following email id: *research.bulletin@icmai.in*

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