Governance of private sector corporate hospitals and their financial performance: preliminary observations based on listed and unlisted hospitals in India

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Abstract

This paper analyses financial performance of corporate hospitals in India. While studying the financial performance of hospitals in our previous work we observed that there are some distinct differences between unlisted and listed hospitals. It is hypothesised that corporate hospitals which are listed on the stock exchanges are likely to be more aware about corporate governance issues and ensure better utilisation of resources and meet expectation of various stakeholders. We study the differences in listed and unlisted hospitals in this paper. The findings suggest that operating cost ratio of listed hospitals is significantly different and lower from the unlisted hospitals. We also find that borrowings of unlisted hospitals are much higher than listed hospitals because they have no access to capital markets to raise money. This increase the financial vulnerability of unlisted hospitals as their ability to service the debt is low. We discuss the implications of these results.

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Introduction and objectives

Hospitals are an important component of healthcare service delivery system. Government in India has initiated many reforms to promote the private hospital sector and it is being projected as one of fastest growing sector. The private capital investment in this sector has increased over the years. But still most of the hospitals are privately owned and very few corporate hospitals have raised capital from markets by issuing shares and very few hospitals are publicly listed on stock exchanges. It is recognised that raising capital directly from markets is an important source of risk capital. This also ensures market discipline, better financial management practices and implementation of good corporate governance mechanisms. Given that market failures in health are inevitable, it is important that healthcare organisations are modulated by good regulatory and corporate governance mechanisms. The performance of health insurance to a large extent hinges on good governance and practices of private sector hospitals. This is because most of private voluntary health insurance is being serviced by private corporate hospitals.

It is important to note that private health sector in India has grown without any appropriate regulations in place. Hospitals which have raised funds from market and which are listed on stock exchanges are required to follow certain corporate governance mechanisms and ensure transparency of their financial performance and results. The hospital organisations which have not been listed on stock exchanges would be mostly closely held and owned by doctor-managers. Since most of hospitals in India are owner managed, they operate at local level only and, therefore, are not bound by stringent rules and disclosure requirements.

If we want to see from the perspective of corporate governance then there comes a question that whether listed hospitals have better corporate governance than unlisted ones. To analyse this first we need to understand what corporate governance is.

> *"Corporate Governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The corporate governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society" (Sir Adrian Cadbury in 'Global Corporate Governance Forum', World Bank, 2000).*

From this definition, we can see that corporate governance makes organisation more responsible towards society in general and its shareholders particularly. It is very difficult to enforce corporate governance through some formal regulations but has to be enforced through self-discipline and peer-group pressure mechanisms. Still there are ways in which government has tried to make corporations more aware of the corporate governance issues. One very important tool for corporate governance in companies is through listing. If there are some measures in listing agreement then companies will have to adhere to them and some level of corporate governance can be ensured.

In India, the Confederation of Indian Industry (CII) took the lead in framing a desirable code of corporate governance in April 1998. This was followed by the recommendations of the Kumar Mangalam Birla Committee on Corporate Governance. This committee was appointed by the Securities and Exchange Board of India (SEBI). The recommendations were accepted by SEBI in December 1999, and are now enshrined in Clause 49 of the Listing Agreement of every Indian

stock exchange. SEBI also instituted a committee under the chairmanship of Mr. N. R. Narayana Murthy which recommended enhancements in corporate governance. SEBI has incorporated the recommendations made by the Murthy Committee on Corporate Governance in clause 49 of the listing agreement. Therefore, companies which are listed on the stock exchanges are likely to be more aware about corporate governance issues and should ensure better utilisation of resources and meeting expectation of various stakeholders.

It is hypothesised that listing may lead to differences in disclosure of information and has implications of reporting of financial performance of hospitals. We make an attempt to study these differences in this paper. While studying the financial performance of hospitals we observed that there are some distinct differences between unlisted and listed hospitals. Therefore, it motivated us to do a separate study to identify this phenomenon. This paper takes some basics from the work of Bhat (2006) and Bhat and Jain (2006). Both these papers have analysed financial and operating performance of hospitals using factor analysis. In this paper we are separating listed and unlisted hospitals and we are making an attempt to examine the financial and operating performance differences between listed and unlisted hospitals.

Before we proceed further it is important to understand the theoretical perspective of agency theory which is guiding this discussion. In the case of hospitals, the ownership pattern of listed and unlisted hospitals is different. In case of listed hospitals the doctors would have a large stake in the hospitals. In case of listed hospitals managers and owners are different and it is expected that ownership will be more diffused while unlisted hospitals will have more concentrated ownership. Agency problem in this case may arise because monitoring of performance and cost will be different in the case of listed and unlisted hospitals and also the laws and regulations regarding performance reporting are different in both the cases (Jensen and Meckling 1976). By keeping in mind the agency theory perspective it is hypothesized that financial performance of listed hospitals is likely to be better and superior to those of unlisted ones. That is, in the case of unlisted hospitals owners/managers will be having higher operating costs and managers-owners of these organisations have incentive to maximize pecuniary and non-pecuniary benefits which increases their cost ratio. Operating costs can be shown to be high so as to minimise the taxable profits and reduce tax payments.

On the other hand listed hospitals are likely to be more transparent in producing and providing information because of the listing regulations, control and market discipline.. They are governed by good corporate governance practices and have better monitoring of expenses and therefore incur relatively less costs. We also expect that borrowings will be lower in case of listed hospitals because they have better access to capital markets to raise money. We discuss the implications for these differences.

Current Status

The quality of healthcare services provided to the population by both public and private hospital varies and depend on a number of factors. The current structure of the health care delivery system does not provide adequate incentives to the providers and managers for improvement in efficiency and quality. This is because the provider payment system is significantly fee-for-service based. Mechanisms to ensure better efficiency, accountability, and more responsible governance in hospitals have not been articulated and are yet to be framed. Health insurance penetration is still low. As this penetration goes up it may influence the way the private health care providers perform and deliver.

As mentioned above, private sector in India provides care to a large population. It accounts for 3/4th of health care expenditures and mostly out-of-pocket expenditures. In the absence of any clearly defined policy and direction, this sector has developed with large number of small-sized facilities with closely networked providers for referrals and with little linkages with public health

system and referrals in general. Problems range from inadequate and inappropriate treatments, excessive use of higher technologies, and wasting of scarce resources, to serious problems of medical malpractice and negligence (Bhat 1996). Current policies and processes for health care are inadequate or not responsive to ensure health care services of acceptable quality and prevent negligence (Nandraj et al. 2001)

Quality enhancement involving all professional and service groups is essential to ensure good quality in health care. Towards this one of the mechanisms that are being proposed is accreditation system. Accreditation is a process wherein health care standards are set and for which compliance is measured by a credible independent accreditation agency. In various countries, accreditation helps the hospitals to enhance patient care through continuous quality improvement process. Accreditation strengthens community confidence by highlighting hospital's commitment to provide safe and quality care to the community. In India till now, there has been no sustained concentrated effort on this front. Few private agencies have started accreditation system but such initiatives are in nascent stages. At the same time some major hospitals have applied for accreditation by international agencies.

Another important influence on performance of hospitals can come from insurance companies and third party administrators (TPAs) which are expected to monitor the hospitals for their quality, cost and efficiency. This ensures some kind of external evaluation of hospitals and forces them to think to improve their efficiency and performance. Since health insurance is in very nascent stage, this mechanism lacks its effectiveness. There are also instances of lack of coordination between insurance providers, providers and insurance policyholders. Even the introduction of third party administrators (TPAs) who are a link between hospitals, insurance companies and policyholders has not helped in sorting out key coordination and networking issues and many providers have withdrawn from the TPA network. It is observed that cost control, ensuring efficiency and monitoring are some key issues on which there are serious disagreements. This experience has created difficulties in implementing mechanisms which contain costs and ensure quality of care.

One way to bring transparency in the functioning of hospitals and reduce information asymmetry is to make provisions by which companies are mandated to provide data about their performance and operations. Hospitals which have raised capital from market have the option of listing their organisations on the stock exchange obligating them to provide data in standard formats and follow disclosure norms. In India, very few hospitals are listed. Before we proceed further, it is important to understand what exactly we mean by listing of companies in India.

Listing of companies on the stock exchange enables the investors to buy or sell their investments and deal in securities on a recognised stock exchange. The securities may be of any public limited company, Central or State Government, quasi-governmental and other financial institutions/corporations, municipalities, etc. The objectives of listing are mainly to provide liquidity to securities, mobilise savings for economic development, and protect interest of investors by ensuring full disclosures.

To get listed on the stock exchange, companies have to meet some criteria and requirements. These requirements are made to make sure that companies which are listed at least have some critical size. In India for example Bombay Stock Exchange has following listing requirements for new companies[1]:

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[1] http://www.bseindia.com/about/abintrobse/listsec.asp

	Any Company	**Companies in high technology**
Minimum Capital	Issued and subscribed equity capital after the public issue is Rs. 100 million	Minimum post-issue paid-up equity capital should be Rs. 50 million
	Post issue net worth (equity capital + free reserves excluding revaluation reserve) of Rs. 200 million	Post issue net worth (equity capital + free reserves excluding revaluation reserve) of Rs. 20 million
		Revenue from the main activity should be at least 75% during the two immediately preceding years
Minimum Public offer	At least 25% of each class or kind of securities is offered to the public for subscription	At least 10% of the securities issued by the company may be offered to the public subject to the following: · Minimum 2 million securities are offered to the public (excluding reservation, firm allotment and promoters contribution) · The size of the offer to the public is minimum Rs. 500 million.

Listed companies in India have to adhere to corporate governance standards, therefore, listing of companies results in better corporate governance. Corporate governance principles in India were formally defined for the first time by the Desirable Corporate Governance code on best practices formulated in April 1998 by the Confederation of Indian Industry (CII). The code mainly dealt with board composition, non executive directors, audit committees and disclosures, especially those of a non-financial nature. It stressed the fact that one group of directors is sufficient to maximise long-term shareholder value if it performs strongly, making two-tier boards redundant. It also stipulated that board meetings should be held at least six times a year at bi-monthly intervals. Some of the most important provisions incorporated in the Indian Companies Act are those related to the nomination facility for shareholders, the buy back of securities, the relaxation in norms related to incorporate loans and investments. The setting up of the Investor Education and Protection Fund (IEPF) under the Companies Act, allowing sweat equity and compliance of accounting standards in preparation of annual accounts, so as to provide initiatives and safeguards for improved investor protection and better corporate governance, are some of the mechanisms initiated in this direction. Listed companies have to adhere to these codes while unlisted ones have discretion to use them. Some of the advantages of listing companies are freely transferable securities, easy liquidity of securities, reputation, public awareness, more transparency, and helps in obtaining loans from banks/institutions.

A listed company in India is obligated to provide information to the stock exchange and adhere to some guidelines. These obligations are elaborated in all the relevant clauses of the Listing Agreement which the company has entered into with the Stock Exchange(s). These help in transparency and minimise information asymmetry. The main obligations mentioned in the listing agreement which the company has to comply with each of the stock exchange(s) where the securities of the company are listed and traded are given in Exhibit I. As we can see in Exhibit I, most of these obligations are of the financial in nature and related to transparency in disclosing information to contributors of capital. However, it must be pointed out that in the case of hospitals, just giving financial data may not be enough as there are non-financial information which are critical in case of hospitals, if provided by the hospitals, would provide better picture of the operating and financial health of hospitals. For example, data related to average length of stay of patient, case-mix index of hospital, occupancy rate of the hospital, net revenue per patient can provide valuable information about functioning and efficiency level of hospitals. Therefore, there is a need for more disclosure from hospitals and listing requirements for the hospitals need to be modified to include non-financial information. If we have same listing requirements as for other companies then it will not serve the purpose adequately.

At this point, it is important to see what kind of work has been done in India regarding understanding the financial performance of hospitals. Very few papers have touched the subject of financial performance of hospitals. Bhat (2006) states that though private healthcare and medical expenditure in real terms has grown at 10 per cent per annum and Government of India has initiated various policy reforms to strengthen the hospital sector, this sector has not shown much growth. Much of this can be attributed to the financial health and risks associated with this sector, because these are critical determinants for attracting private capital in any sector. On the basis of available data, Bhat and Jain (2006) found that distribution of hospitals in India across states is much skewed and only few states account for a large percentage of private hospitals in terms of assets. These hospitals also vary in size and capacity. Data related to non-financial variables, however, is not available for hospitals but financial data do not present a very good picture of this sector.

With time, hospitals have shown some improvement in performance but much need to be done in order to make this sector attractive. Based on 25 key financial ratios, six financial dimensions were identified by Bhat and Jain (2006) and these describe financial health of hospitals. These factors are fixed assets age, current assets efficiency, financial efficiency, financial structure, profit appropriation, and financial costs and profitability.   The financial dimensions differ significantly across sectors.   For example, the study found that median interest coverage of manufacturing sector is around 2 while this figure for hospital sector is in the range of one. On the other hand the median borrowings ratios for hospital sector are less than manufacturing sector. Therefore, we can see that interest burden is relatively higher for hospitals and it is not because debt proportion is very high but because of lower availability of risk capital. This also has implications for cost of borrowings.

The previous study suggested that risks in this sector are relatively higher because of higher operating costs resulting in lower surplus, lower efficiency in utilising assets and less economies of scale. There are issues of reliability of data as most hospitals are not listed and data provided by them may not be presenting the real picture.

Data

To compare the listed and unlisted hospitals we obtained the data from two databases which are maintained by CMIE. First Source[2] database gave information regarding both unlisted and listed hospitals and Prowess[3] database gave information regarding listed hospitals. We collected the data for three year period 2002-04. Data was available for following number of hospitals:

[2] First Source is the largest database on the financials of companies registered in India. Complete financial details are available for all public limited companies (including listed and unlisted companies). However, the financial details are limited to the assets and liabilities statement statistics in respect of private limited companies.

[3] Prowess is a database of large and medium Indian firms. It contains detailed information on over 9,300 firms. These comprise all companies traded on India's major stock exchanges and several others including the central public sector enterprises.

Year	Listed Hospitals	Unlisted Hospitals[4]
2002	22 (26)	107 (150)
2003	29 (29)	70 (108)
2004	24 (24)	24 (41)
Figures in bracket shows number of hospitals without removing outliers		

We use 9 key financial ratios of the hospitals in the sample for the analysis. These ratios measure operating costs, debt structure, and efficiency in using assets (turnover parameters). These ratios are subset of ratios used by Bhat and Jain (2006). The list of these ratios is provided in following table:

List of key financial ratios used in the study

- COSTREV — Operating costs as percent of Revenue. Operating costs have been defined as costs in providing services and do not include interest and taxes. This truly represents operating costs of providing services.

- INTREV — Interest expense as percent of total revenue representing financial costs and ability of hospitals to service the debt.

- TATO — Total asset turnover defined as total revenue divided by total assets and measures efficiency in utilisation of assets of hospitals.

- CR — Current ratio defined by current assets divided by current liabilities and provides information about ability of hospitals to meet short-term obligations.

- DE — Debt equity ratio. This ratio provides information about intensity of borrowings as compared to risk capital,

- ROTA — Return on total assets defined by PBIT to Total assets

- ROCE — Return on capital employed defined by PBIT to capital employed

- RENW — Return on net worth defined as profit after tax as percent of net worth

- DIVPAYOUT — Dividend payout defined as total dividends paid as percent of profit after tax

Before we go into data analysis it is also interesting to see that how this data is behaving and what kind of patterns we observe. Exhibit II gives the descriptive statistics for all the ratios for both listed and unlisted hospitals. Here we can compare the mean, median and different percentile values across two samples.

One interesting point here is that when we plot the data we observed significant outliers in the data. These extreme values affect the mean values as can be seen in Exhibit II. We also observe that variation is much higher in case of unlisted hospitals than listed ones. This can be seen in the 1 percentile and 99 percentile values and also from the standard deviation.

The most striking difference in the raw data is that the data ranges for unlisted hospitals are generally much wider than those of listed hospitals.

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[4] First source database was not able to tell that whether not-for-profit hospitals are also included in the database and we were not able to get clarity regarding this information from CMIE also. We have removed any hospital which looked that it may be a not-for-profit organisation. This was done by searching information about the hospital on internet and other secondary sources.

The total ranges of the observations are given for all of the financial ratios under both the listed (L) and unlisted (UL) hospitals, in total as well as for each of the years studied. Of the 33 comparisons of ranges (3 individual years), the range of observations for the unlisted firms is larger than the listed firms in all but 4 cases (see Table 1).

Table 1: Range						
	2002		**2003**		**2004**	
Variable	**UL**	**L**	**UL**	**L**	**UL**	**L**
COSTREV	4774.24	755.06	5266.43	170.12	218.99	356.81
INTREV	867.75	57.29	173.97	81.25	115.75	22.71
DIVPAYOUT	748.75	172.41	326.45	99.33	101.44	119.72
RENW	1819835.31	279.42	112.74	74.55	147.46	82.26
TATO	4.22	1.12	4.57	1.06	4.11	1.02
CR	4797.27	8.27	3310.98	7.96	284.10	7.82
ROTA	490.90	63.73	96.32	33.19	73.93	187.40
ROCE	1806561.15	148.04	186.61	64.72	191.87	63.32
DE	12521.36	7.61	52.65	17.81	19.23	4.72

The notion of the unlisted hospitals being more variable is confirmed by the marked difference between the standard deviations of the unlisted and listed hospitals. In 23 of 27 cases, the unlisted hospitals' deviations are much larger (see Table 2).

Table 2: Standard Deviation						
	2002		2003		2004	
Variable	**UL**	**L**	**UL**	**L**	**UL**	**L**
COSTREV	523.57	141.83	671.78	28.77	38.53	62.26
INTREV	79.52	12.43	23.21	15.21	19.14	6.12
DIVPAYOUT	45.23	42.75	34.68	29.30	18.11	34.84
RENW	148091.36	56.51	14.96	16.23	23.10	21.39
TATO	0.58	0.31	0.68	0.31	0.80	0.30
CR	391.73	1.72	413.87	1.54	47.96	1.99
ROTA	36.29	14.18	11.41	8.68	12.17	31.72
ROCE	147006.03	25.17	19.03	16.79	26.73	17.01
DE	1020.04	1.71	6.26	3.73	3.56	1.07

After removing outliers we observe the variation in data is much less and there is less difference between the values of mean and median for both listed and unlisted hospitals.

In the following graphs we can see how different ratios are behaving with time after removing the outliers.

When we remove the outliers and then compare the difference between listed and unlisted hospitals we can see that now the variation is much less as compared to before, for unlisted hospitals. Still we can see here that variation in range and standard deviation is less in case of listed than unlisted ones.

Table 3: Range after adjusting for outliers						
	2002		**2003**		**2004**	
Variable	**L**	**UL**	**L**	**UL**	**L**	**UL**
COSTREV	119.80	133.14	170.12	296.91	170.44	61.57
INTREV	24.86	102.27	24.28	59.78	22.71	48.44
DIVPAYOUT	172.41	82.11	99.33	60.51	119.72	37.74
RENW	122.59	59.16	74.55	55.03	82.26	48.05
TATO	1.01	1.70	1.06	2.16	1.02	1.31
CR	3.97	26.18	7.96	242.78	7.82	127.96
ROCE	96.19	77.80	64.72	69.35	63.32	57.90
ROTA	63.73	72.88	33.19	59.58	65.78	28.75
DE	7.61	10.77	17.81	8.79	4.72	5.45

Turnover CR and DE

TATO

Profitability
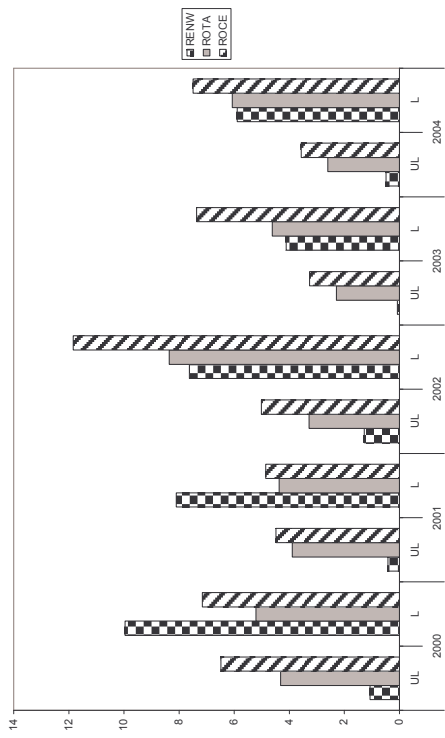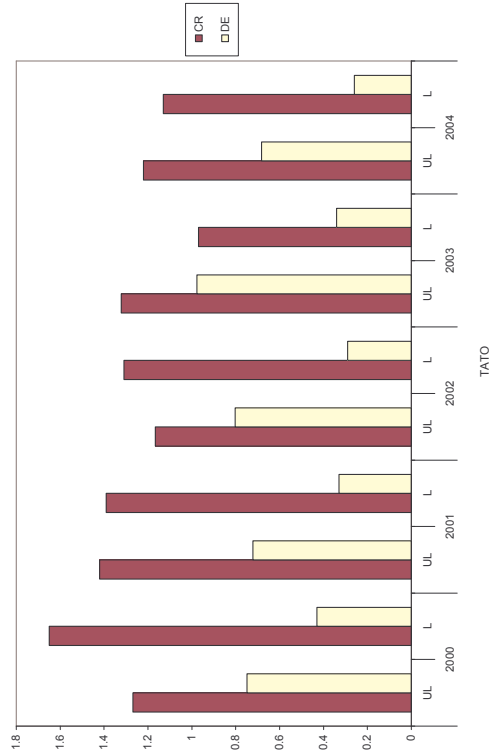
Interest and DE Ratio

IIMA ● INDIA
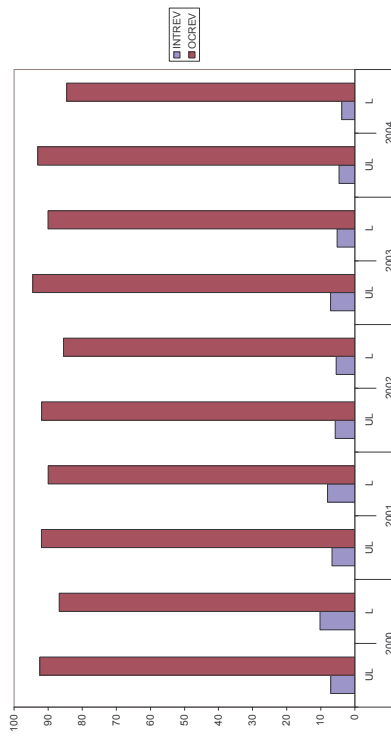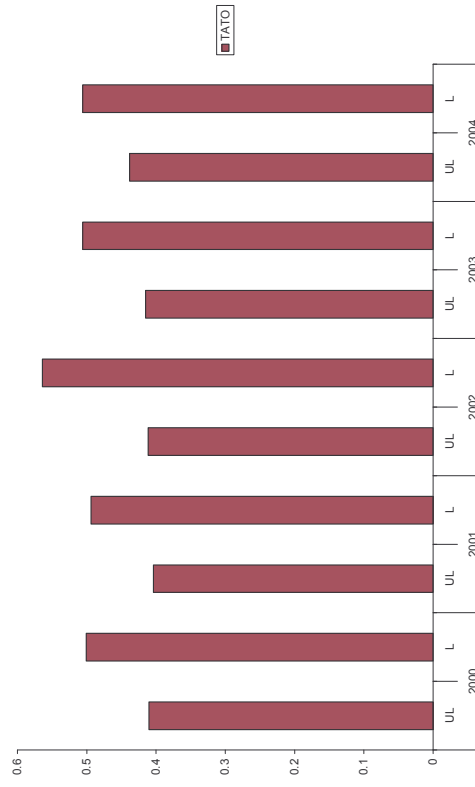
Table 4: Standard Deviation after adjusting for outliers						
	2002		2003		2004	
Variable	**L**	**UL**	**L**	**UL**	**L**	**UL**
COSTREV	25.45	22.26	28.77	36.29	30.50	14.32
INTREV	6.45	18.65	6.13	13.57	6.12	10.70
DIVPAYOUT	45.28	12.32	29.30	11.94	34.84	8.56
RENW	24.18	9.95	16.23	9.49	21.39	10.12
TATO	0.27	0.32	0.31	0.40	0.30	0.29
CR	1.13	4.43	1.54	28.91	1.99	25.86
ROCE	20.98	12.32	16.79	10.95	17.01	10.94
ROTA	14.09	8.45	8.68	7.97	12.94	6.21
DE	1.77	1.47	3.73	1.43	1.07	1.18

On an average the variation in unlisted hospitals is much more than the variation in listed hospitals. Since hospitals under both the categories belong to the same sector, it seems that this difference may be because of listing requirements and disciple the organisations observe while reporting information to public and its stakeholders. To get more clarity on this issue we performed few more tests related to difference in significance between two samples and also correlation of financial ratios in both samples.

Comparison between listed and unlisted corporate hospitals

The comparison of financial dimensions between listed and unlisted hospitals poses some methodological problem. As indicated in Exhibit II and also pointed by Ezzamel et al (1987), the distributions of these financial ratios are not normal. When we tried to transform data with log transformation, it did not prove of much help here. Therefore, parametric methods of comparison, between listed and unlisted financial ratios are not appropriate as they assume normal distributions. Small sample size is another problem in using parametric tests. For the listed hospitals we have less than 30 hospitals for all years. Therefore, by observing all these issues, it is not advisable to use parametric tests here. We use non-parametric test. Thus the non-parametric Wilcoxon Sign Ranked tests, which permit comparisons between non-normally distributed distributions, were performed. We also use Median test which compare medians, to reconfirm the results of Wilcoxon test. PROC NPAR1WAY was used (in SAS) to test the null hypothesis that there is no difference in the financial ratios against an alternative hypothesis that the financial ratios differs between listed and unlisted hospitals. As we can see from Table 5 that in six out of nine ratios there is a significant difference between listed and unlisted hospitals.

Table 5: Statistical differences between financial ratios of listed and unlisted hospitals									
	2002			2003			2004		
	W	M	Direction	W	M	Direction	W	M	Direction
COSTREV	*	**	L<UL	*	**	L<UL	**	**	L<UL
INTREV	***		L<UL	***		L<UL			
DIVPAYOUT	*	*	L>UL	**	**	L>UL	**	**	L>UL
RENW	*	**	L>UL	**	**	L>UL	***	**	L>UL
ROTA	*	**	L>UL	*		L>UL	**	**	L>UL
TATO	-	-		-	-		-	-	
CR	-	-		-	-		-	-	
ROCE	*	**	L>UL	**		L>UL	**	***	L>UL
DE	**	**	L<UL	**	**	L<UL		***	L<UL

[#]Significant different at 1%, ** Significant difference at 5%, *** Significant difference at 10%
W = Wilcoxon Method, M = Median Method
L = Listed and UL = Unlisted

From the above table we can see that there are significant differences between listed and unlisted hospitals. The statistical results suggest that listed hospitals have significantly lower operating cost than unlisted hospitals. The median COSTREV ratio of listed hospitals is 84 per cent as compared to 94 per cent of unlisted hospitals. This is in line with our expectation that listed hospitals will have better control and have less cost. This may also be because of better corporate governance. As discussed in previous sections of the paper, the unlisted hospitals are expected to be owner-managed hospitals. Owners would have more incentive to report higher cost and increase their share in costs. This also helps them to save taxes.

The dividend payout is an important indicator to suggest how hospitals use their surplus. We observe that listed hospitals give significantly higher dividend than unlisted hospitals. This shows that not only listed hospitals earn higher profit but also they distribute it more to their shareholders. In terms of profitability also, which is represented by three ratios RENW, ROCE and ROTA, listed hospitals performed much better than unlisted ones. This shows that listed hospitals are managing their assets much more efficiently and provide better returns for the money invested.

The financial structure of hospitals would have significant implications for interest expenses and long-term solvency of hospitals. This also affects the overall cost structure of hospitals and has implications for generation of surplus. The comparison of median debt-equity ratios of listed and unlisted hospitals suggests that for listed hospitals this ratio is 0.26 and for unlisted hospitals it is 0.66. The debt-equity ratio of listed hospitals is significantly less than the unlisted ones. This has implications for interest as per cent of revenue. The median interest to revenue ratio for listed hospitals is 3.38 per cent where for unlisted hospitals this ratio is 5.57 per cent.

Correlation Comparisons

Brealey and Myers (2000) and Foster (1978) are but two who caution against the use of too many financial ratios to analyse any organisation. Foster showed that many of the financial ratios were indeed highly correlated with each other due to the way financial statements and financial ratios are calculated. For example, for a data set Foster results suggested that 80 per cent of the information contained in the ROA was present in the ROE.

We analysed whether the correlations found in listed hospitals was similar to those found in unlisted hospitals? If not, it could be necessary to examine financial ratios of unlisted hospitals

differently from listed hospitals. Examining the correlations of the financial ratios provides insights into the question of "sameness." both statistically and practically.

In all there are 36 correlations across all ratios used in the study. These are reported in Exhibit II for both listed and unlisted hospitals. The comparison between listed and unlisted hospital is shown in Table 6.

Table 6: Correlation comparisons

		Both Significant	One Significant	1+2	Both Insignificant	Total
Same Sign	Yes	20	2	22	7	29
	No	0	2	2	5	7

As we can see from Table 6 that for 36 correlations across all years, only 20 pairs of both significant correlations and have same sign between listed and unlisted hospitals. This shows that financial ratios and therefore accounting statements of listed and unlisted hospitals do not correlate in the same way. This means that there is some difference between listed and unlisted hospitals in their financial characteristics.

Conclusions and Implications

After comparing listed and unlisted hospitals we observe that there are significant differences between financial characteristics and therefore financial health of listed and unlisted categories of hospitals. Close examination of the two data sets shows that while financial ratios may be correlated to each other, differences across several dimensions are clear. Further non-parametric statistical comparisons fail to confirm that the two data sets of listed and unlisted hospitals are "similar." This could be due to several factors.

One is that listed hospitals are bound by some specific rules and regulations and therefore, they are required to disclose information in set formats prescribed by the regulator, while unlisted hospitals are not bound by any of these rules and considerable amount of discretion in reporting and disclosing information exist. Listed hospitals will be making their financial statements more carefully since they are subject to close scrutiny from their shareholders, stock exchange, company law board and various other stakeholders, while unlisted hospitals are not exposed to discipline imposed by others.

Second reason is that in the case of listed hospitals information provided by financial statements is targeted for their shareholders and various other stakeholders, while for unlisted hospitals many times the owner is shareholder and manager. Therefore the financial information is mostly for their internal use, and may be for tax related purposes. The data also suggest that around 70 per cent of unlisted hospitals do not have taxable income and therefore do not pay taxes. It is expected that since listed hospitals would be relatively more concerned about the maximization of shareholders wealth, the information provided by them has to be more consistent to avoid any adverse implications for valuation and expectations of stakeholders. In the case of unlisted hospitals this problem will not be there. Therefore, we observe more variability in financial results in case of unlisted hospitals. The data also suggest that cost ratios of unlisted hospitals are higher and it is likely that shareholders and owners are likely to be the same person. There is a high chance that they will provide higher non-pecuniary benefits to themselves, like much more facilities and cash flows. This also helps them to reduce tax burden.

Unlisted hospitals tend have high debt equity ratio. From literature we know that owners/managers of a high debt company do have an opportunity to extract value from debt

holders by increasing investment risk after debt is in place. This behaviour creates agency costs which the choice of capital structure by unlisted hospitals must recognise and control (Jensen and Meckling 1976).

The comparison of listed and unlisted hospitals needs to be interpreted with caution as there are differences in way they prepare and report the financial results. Though in present study we have taken both listed and unlisted hospitals which provide services in the same sector but still there are difference of size, motivation for being unlisted, scale of the hospital etc.

Another important implication is that inter-correlation of different financial ratios in the case of unlisted hospitals is different from listed hospitals. Here, the difference is not only because of accounting practice but also there may be some basic differences in the business only, like size, scale etc. For example we can see that correlation between ROCE and RENW is as high as 0.82 in the case of unlisted hospitals while it is only 0.49 for listed hospitals. Similarly correlation between ROTA and RENW is higher in case of listed hospitals than unlisted ones. Therefore, this shows that there are some basic differences between unlisted and listed hospitals.

In India, most of the hospitals are in the category of unlisted ones and that too are not very organised. From the result we can see that this significant difference between listed and unlisted hospitals exist also because listed hospitals have to adhere to accounting regulations provided by SEBI, stock exchanges and the Institute of Chartered Accountants of India. It is important to note that hospitals as a service delivery organisation are very different from other organisations. They need appropriate regulation as the information requirements to understand efficiency of hospitals are different. In the case of unlisted hospitals they are not at all bound by any regulations, so they are free to report their accounts in the manner they want. Therefore, we feel that there is a case to have separate rules and regulations regarding hospitals for both listed and unlisted hospitals. The information requirements should contain not only disclosure regarding financial data but also details regarding non-financial information including average length of stay, occupancy rate, case mix, number of admissions, number of OPD patients, revenue per patient etc. The reporting of non-financial information should be made mandatory in case of hospitals. The disclosure of such information may also help in accreditation of hospitals.

Having separate regulation and more transparent requirement regarding disclosure of information will get a better idea about the functioning and performance of this sector and it may also help this industry to attract more private capital. This will provide the much needed monetary boost to this sector and will help it in its future growth.

Shareholding pattern for unlisted hospitals are not available. The examination of shareholding pattern of listed hospitals indicate that on an average more than 40 per cent is owned by public and around 38 per cent is owned by private parties. One important point here is that foreign promoter/collaborator shareholding is negligible in most of the cases. This indicates that Indian hospital sector has not been attractive for the foreign players till now and there is need to make this sector more attractive so that foreign capital can also come in this sector. The development of health insurance sector also critically hinges on better regulated hospital sector.

Further analysis of non-financial information of both listed and unlisted hospitals will be useful to examine differences in operational efficiency of hospitals. Future research can be focused on these issues using non-financial information. This will give a much better idea of differences between these two categories. Similarly ownership/shareholder pattern data will also provide useful insights into differences in hospital performance and whether ownership makes any difference. The future research may also focus on the motivational differences between listed and unlisted hospitals to carry their operations.

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Exhibit I: Major obligations of listed companies in India

The companies which are listed on stock exchanges have many obligations to discharge. These obligations are elaborated in all the relevant clauses of the Listing Agreement which the company has entered into with the Stock Exchange(s). Broadly, following are the main obligations mentioned in the listing agreement which the company has to comply with each of the stock exchange(s) where the securities of the company are listed and traded:

Annual Listing Fees
Depending upon the paid-up capital, each company is required to pay annual listing fees on or before 30th April for the each financial year to all the stock exchanges where securities of the company are listed.

Notice of Board Meetings
Details and agenda of any Board Meeting at which the company is going to consider quarterly results, yearly results, dividend (including interim dividend), rights issue, bonus issue, amalgamation, mergers, consolidation/sub-division of securities or any such matters which are price-sensitive and have an effect on the market price, must be informed at least 7 days prior to the date of the Board Meeting.

Publishing of Quarterly Results: This is one of the most important requirements. As per recent amendment, each company is required to approve at the Board Meeting, the un-audited quarterly results within one month of the expiry of each quarter. For example, if the quarter ends on 30th June, then the board meeting should be convened on or before 30th July.

Book Closure Notice: The register of members and share transfer register must be closed once in a year at the time of Annual General Meeting (AGM). For all other purposes, the company should fix a record date. With regard to the closure of such books, the company is required to inform the Stock Exchanges at least 42 days in advance.

Notice of General Meetings: For all General Meetings (i.e. Annual General Meeting & Extra Ordinary General Meetings), the company is required to inform the Stock Exchanges about the agenda, date, time, venue, etc at least 21 days prior to the date of the meeting.

Annual General Meeting (AGM): After every AGM, the company is required to give the following: (a) Six copies of the Annual Report comprising of Audited Balance Sheet Profit & Loss Account, Directors' Report, Auditors' Report, Cash Flow Statement etc., (b) shareholding pattern in the prescribed format, (c) details of top 50 shareholders, (d) distribution schedule of the shareholders of the company, and (e) proceedings of the AGM.

Exhibit II

Descriptive Statistics: Unlisted Hospitals

Year – 2002				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	151	176.456	92.556	523.572
INTREV	151	21.589	5.532	79.519
DIVPAYOUT	151	2.557	0.000	45.226
RENW	151	-12054.50	0.640	148091.360
TATO	151	0.506	0.336	0.582
CR	151	43.408	1.269	391.727
ROTA	151	0.690	2.976	36.287
ROCE	151	-11958.63	3.892	147006.030
DE	151	91.122	0.670	1020.040

Year – 2003				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	108	198.271	94.244	671.781
INTREV	108	12.655	5.347	23.211
DIVPAYOUT	108	7.209	0.000	34.677
RENW	108	-1.988	0.085	14.961
TATO	108	0.516	0.367	0.676
CR	107	67.051	1.329	413.866
ROTA	108	1.985	2.216	11.412
ROCE	108	3.892	2.765	19.028
DE	108	2.155	0.858	6.260

Year – 2004				
Variable	**N**	**Mean**	**Median**	**Std Dev**
PBITMARG	41	96.914	93.994	38.530
INTREV	41	9.719	3.719	19.137
DIVPAYOUT	40	5.005	0.000	18.113
RENW	41	-4.443	0.000	23.099
TATO	41	0.614	0.407	0.797
CR	41	12.318	1.216	47.959
ROTA	41	3.311	2.384	12.167
ROCE	41	4.282	3.175	26.734
DE	41	1.460	0.641	3.565

Descriptive Statistics: Listed Hospitals

Year – 2002

Variable	N	Mean	Median	Std Dev
COSTREV	25	113.666	85.484	141.829
INTREV	25	10.450	6.989	12.431
DIVPAYOUT	26	23.234	0.000	42.753
RENW	26	-5.352	5.155	56.512
TATO	26	0.521	0.475	0.308
CR	26	1.770	1.485	1.719
ROTA	26	8.414	7.385	14.180
ROCE	26	10.941	9.925	25.175
DE	26	0.933	0.250	1.711

Year – 2003

Variable	N	Mean	Median	Std Dev
COSTREV	29	85.760	90.052	28.766
INTREV	29	8.627	5.184	15.208
DIVPAYOUT	29	14.994	0.000	29.303
RENW	21	4.760	4.110	16.228
TATO	29	0.512	0.506	0.311
CR	29	1.359	0.970	1.543
ROTA	29	7.501	4.620	8.677
ROCE	21	12.540	7.370	16.794
DE	29	1.715	0.340	3.734

Year – 2004

Variable	N	Mean	Median	Std Dev
COSTREV	24	76.466	84.583	62.264
INTREV	24	5.845	3.876	6.119
DIVPAYOUT	24	19.001	0.000	34.840
RENW	22	1.245	5.890	21.387
TATO	24	0.560	0.506	0.296
CR	24	1.811	1.130	1.986
ROTA	24	10.693	6.071	31.723
ROCE	22	12.451	7.490	17.013
DE	24	0.694	0.260	1.069

Descriptive Statistics: Unlisted Hospitals
(After removing Outliers)

Year – 2002				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	113	106.02	92.66	53.98
INTREV	114	16.68	6.43	31.13
DIVPAYOUT	114	2.88	0.00	11.96
RENW	114	-0.08	0.69	10.78
TATO	114	0.45	0.36	0.33
CR	114	2.53	1.14	4.33
ROTA	114	2.00	2.99	16.02
ROCE	114	5.67	3.99	13.47
DE	114	1.14	0.80	1.43

Year – 2003				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	71	104.20	94.52	40.29
INTREV	71	11.91	7.25	13.95
DIVPAYOUT	71	3.14	0.00	11.86
RENW	71	-1.21	-0.02	9.57
TATO	71	0.50	0.41	0.40
CR	70	2.03	1.32	2.75
ROTA	71	2.00	2.24	8.11
ROCE	71	4.22	3.23	11.04
DE	71	1.25	0.96	1.42

Year – 2004				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	25	100.48	93.99	25.97
INTREV	25	8.79	5.57	10.48
DIVPAYOUT	25	2.31	0.00	8.39
RENW	25	-0.71	0.13	10.11
TATO	25	0.46	0.41	0.30
CR	25	6.48	1.22	25.35
ROTA	25	2.08	2.38	6.66
ROCE	25	3.82	3.18	11.08
DE	25	0.91	0.66	1.16

Descriptive Statistics: Listed Hospitals
(After removing Outliers)

Year – 2002				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	22	82.80	85.47	25.46
INTREV	22	7.07	5.54	6.45
DIVPAYOUT	22	27.46	0.00	45.33
RENW	22	10.47	7.63	24.18
TATO	22	0.59	0.56	0.27
CR	22	1.54	1.31	1.13
ROTA	22	10.55	8.36	14.09
ROCE	22	15.87	11.84	20.98
DE	22	0.96	0.29	1.77

Year – 2003				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	29	85.66	90.06	28.77
INTREV	29	8.63	5.18	15.21
DIVPAYOUT	29	14.99	0.00	29.30
RENW	21	4.76	4.11	16.23
TATO	29	0.51	0.51	0.31
CR	29	1.36	0.97	1.54
ROTA	29	7.50	4.62	8.68
ROCE	21	12.54	7.37	16.79
DE	29	1.71	0.34	3.73

Year – 2004				
Variable	**N**	**Mean**	**Median**	**Std Dev**
COSTREV	24	76.47	84.58	62.26
INTREV	24	5.85	3.88	6.12
DIVPAYOUT	24	19.00	0.00	34.84
RENW	22	1.25	5.89	21.39
TATO	24	0.56	0.51	0.30
CR	24	1.81	1.13	1.99
ROTA	24	10.69	6.07	31.72
ROCE	22	12.45	7.49	17.01
DE	24	0.69	0.26	1.07

Correlation – Listed Hospitals

Spearman Correlation Coefficients (Prob > |r| under H0: Rho=0)								
	COSTEV	**INTREV**	**DIVPAYOUT**	**RENW**	**TATO**	**CR**	**ROCE**	**ROTA**	**DE**
COSTREV	1								
INTREV	**0.249**	1							
	0.015								
DIVPAYOUT	-0.153	**-0.276**	1						
	0.140	0.007							
RENW	**-0.416**	**-0.334**	**0.385**	1					
	<.0001	0.002	0.000						
TATO	0.033	**-0.288**	**0.514**	**0.222**	1				
	0.752	0.005	<.0001	0.040					
ROTA	0.019	0.000	-0.046	0.054	-0.009	1			
	0.858	0.997	0.655	0.620	0.932				
CR	**-0.607**	**-0.366**	**0.376**	**0.695**	**0.261**	0.002	1		
	<.0001	0.001	0.000	<.0001	0.015	0.983			
ROCE	**-0.672**	**-0.208**	**0.398**	**0.493**	**0.480**	0.050	**0.589**	1	
	<.0001	0.044	<.0001	<.0001	<.0001	0.634	<.0001		
DE	-0.168	0.160	-0.132	**-0.319**	-0.093	-0.119	-0.079	0.109	1
	0.103	0.122	0.201	0.003	0.366	0.248	0.469	0.291	

Correlation – Unlisted Hospitals

Spearman Correlation Coefficients (Prob > |r| under H0: Rho=0)								
	COSTREV	**INTREV**	**DIVPAYOUT**	**RENW**	**TATO**	**ROTA**	**CR**	**ROCE**	**DE**
COSTREV	1								
INTREV	**0.384**	1							
	<.0001								
DIVPAYOUT	**-0.151**	**-0.148**	1						
	0.032	0.036							
RENW	**-0.546**	**-0.405**	**0.353**	1					
	<.0001	<.0001	<.0001						
TATO	**-0.254**	**-0.372**	**0.212**	**0.432**	1				
	0.000	<.0001	0.003	<.0001					
ROTA	0.008	-0.093	-0.035	0.008	-0.105	1			
	0.906	0.190	0.626	0.911	0.137				
CR	**-0.551**	**-0.263**	**0.458**	**0.926**	**0.524**	-0.050	1		
	<.0001	0.000	<.0001	<.0001	<.0001	0.482			
ROCE	**-0.619**	**-0.256**	**0.369**	**0.824**	**0.359**	-0.037	**0.863**	1	
	<.0001	0.000	<.0001	<.0001	<.0001	0.606	<.0001		
DE	0.125	0.126	-0.089	**-0.308**	0.072	-0.098	**-0.205**	**-0.235**	1
	0.076	0.076	0.209	<.0001	0.312	0.168	0.004	0.001	