



Financial Health of Private Sector Hospitals in India

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Abstract

Hospitals are an important component of the healthcare delivery system. Over the years, India has experienced a significant increase in the number of hospital beds to meet the growing health demands of its population. Most of this growth has been experienced in the small sized private hospital sector (popularly known as nursing homes in India). The corporate hospital sector, however, has not exhibited similar growth though private expenditures on medical and health care in real terms have grown at 10 per cent per annum and government of India initiating number of policy reforms after 1991 aimed at attracting more capital to hospital sector. This experience has something to do with the financial health and risks, as these are critical determinants in attracting private capital. Using the financial balance sheets and profit and loss account data of 128 hospitals in India, this paper examines the financial health of hospitals in the private sector. Based on 26 key financial ratios, the paper empirically identifies relevant dimensions of financial health of hospitals. These dimensions are: profitability, financial structure, overall efficiency, cost structure, profit appropriation, technology advancement, credit management, fixed asset intensity, liquidity and current assets efficiency. It then discusses the implications of the findings. Because of lower profitability, lower financial efficiencies and less understood economies of scale, the risks in the health sector are likely to remain high. Other risk factors are the geographic pull factor, long gestation periods, a highly fragmented sector and inadequacy of standards. In this scenario, new investment in the health sector will remain resource dependent on subsidised channels of funding and will be sensitive to the out-of-pocket payment of fees, which still remains the main channel of revenues of these hospitals.

Financial Health of Private Sector Hospitals in India

I. Introduction and Objectives

Hospitals are the backbone of the health care delivery system. Until the early 1980s, government-run hospitals and those operated by charitable organisations were the main providers of hospital care. However, in the 1980s and thereafter, the sector attracted private capital and fresh investments took place in setting-up hospitals and smaller nursing homes. Large corporate groups and charitable organisations brought private finance and these resources were invested in modern equipments and technologies and in developing health infrastructure. This helped in augmenting the availability of super-specialty services across the country. Corporate groups such as Apollo Hospitals Group, Wockhardt, Fortis Healthcare, Max India paved the way for corporate organisation structure for hospitals and have successfully developed a chain of multi-specialty private hospitals. However, the presence of these hospitals is only in big cities.

Over the years the government has taken a number of policy steps to develop the hospital sector in India. For example, the Union Budget of 2002-03 conferred infrastructure status on the healthcare industry under section 10(23G) of the Income Tax Act. This allowed the private hospitals to raise cheaper long-term capital. Similarly the Union Budget of 2003-04 laying special emphasis on investment in private hospitals, gave hospitals a true status of industry. Some specific policy changes were: (a) benefit of Section 10(23G) of IT Act extended to financial institutions providing long-term capital to private hospitals with 100 beds or more, (b) rate of depreciation in respect of life saving medical equipment increased from 25 per cent to 40 per cent, (c) reduction in basic customs and excise duties, (d) customs duty on specified life saving equipment reduced from 25 percent to 5 percent, with exemption from additional duty of customs. The government also implemented a community based universal health insurance scheme covering hospitalisation expenses. This was expected to provide alternative source of financing and boost the hospitals sector. All these initiatives were expected to strengthen the hospital sector.

As with the demand for hospitals, the need for hospital beds is also significant to meet the growing demands from population. For example, the World Health Organization has estimated that India will need an additional 80,000 hospital beds each year for the next five years to meet the demands of its population. Based on conservative estimates this suggests fixed investment in infrastructure to the tune of Rs. 250 billion each year to meet this target. Given that the government resources are dwindling and that they are required more for public health programmes, the need to attract private capital becomes inevitable.

Healthcare being a highly fragmented industry relies heavily on manpower, capital and technology. In this sector, controlling costs and generating revenues is a daunting task. The recent policy announcements of the government recognise some of these challenges and have made several policy changes to facilitate the growth in this sector. However, the success of these policies depends on the promise this sector makes towards returns on capital, and operating and financial risks, this capital is exposed to. Little is known about the financial performance of hospitals. The objective of this paper is to describe the financial health of hospitals in India and understand vulnerabilities in financial performance of hospitals and discuss the implications of these for the future growth and development of this sector. The motivation for understanding financial performance is that since this sector needs huge capital requirements there will be incentive to produce, analyse and interpret the financial performance of healthcare organisations. Also, it may provide insights as to how we can improve on the performance and which areas need particular attention.

II. Challenges of the Hospital Sector

Hospitals as an organisation face a number of challenges as they are exposed to greater risk as compared to other industry, primarily because of the complexity of its operations, ensuring appropriate quality of care, humanitarian issues, and various ethical dimensions facing healthcare. Besides these, major concerns from the financial perspective include the assessment of (a) viability and sustainability of its operations and the significance of cost recovery mechanisms, and (b) operations and financial risks (who pays when, how and what happens if capacity is not utilised properly). The operational and financial risks in hospital sector and various challenges faced by managers in this sector, also emanate from the following factors:

Growing competition in healthcare: The competition is intensifying with the opening up of more and more hospitals. This growth is mainly restricted to metropolitan areas. There is lot of pressure on hospitals to provide cost effective services and ensure good quality of care. Two areas need special attention. They are: (a) pricing of its services (prices cannot generally be adjusted to frequent changes in the environment, whereas input market sees frequent revision in prices) and (b) the capacity utilisation (it gets affected and changes the economics of healthcare and service provision). When revenues are not adequate to cover costs, the hospitals become financially vulnerable.

The complexity of the healthcare industry is further complicated by limitation on explicitly promoting and advertising hospital services and by the fact that epidemiology of disease patterns in the catchments area remains more or less constant in at least the short run. One cannot just expand services by creating supply for services in the area. If hospitals become financially vulnerable, they may resort to unethical practices such as inducing demand and promoting their services by fee-splitting practices to create this demand.

Limits on geographical spreading of services: Healthcare services cannot be stored. Healthcare, unlike other industries, has got limitation on spreading services; hence, it is difficult to gain economies of scale by creating large facilities.

Need for strategic initiatives: Many a times, hospitals face the challenge of ensuring that qualified professionals remain associated with it. This problem is more severe in hospitals because many times patients come to consult a particular doctor and if that doctor leaves, the patient may follow him to another hospital. Consumers value the services of the hospital, for which they need to make strategic investments, and which may not be financially viable in the immediate future.

Capital cost challenge: Foreign manufacturers dominate the high end of the hospital equipment market and healthcare technologies. Most of the equipment purchases for hospital are of high value and paid in foreign currency. Due to the technological advancement in treatment, there is always an increased risk of faster technological obsolescence. This contributes to higher risk on capital cost invested. In order to recover the cost, hospital pricing policy has to ensure the recovery of the cost of these equipments and technologies. Higher pricing often leads to lesser utilisation of the services. Most of the equipments have shorter payback in the country of their origin, but in the Indian context, the pay back periods are generally longer. This is due to the lower purchasing power of the people and willingness to pay. The payback period of various technologies in India is generally high, ranging from 8 to 10 years, in some cases more. During this period there is always a risk of technological obsolescence.

Lack of health insurance in India: Penetration of health insurance in India is very low. This is another reason why people many times do not get specialised treatment. If the insurance company

is paying for the treatment, hospitals can advise patients to go through many tests, which the patient otherwise will not go through. The availability of insurance generates demand for services and at the same time spreads the risks by pooling mechanism. This may ease out financial difficulties of hospitals, as it may help in faster cost recovery through higher utilisation. Also health insurance will reduce the financial barrier of approaching the hospitals.

III. Methodology and Results

Given these challenges, it is important to understand the financial health of hospitals, so as to explore and discuss various strategic initiatives these organisations can adopt to address these challenges. Traditionally financial analysis of organisations to understand their financial health has relied on financial accounting information and use of financial ratios. Financial ratios provide a better picture of the financial performance of organisations, as they are based on relative performance and adjust for the differences in the size of organisations.

Early attempts to understand the financial performance of hospitals in US and other countries have relied on financial ratios that were generally used to analyse financial performance of retail and manufacturing companies. Over the period, various researchers have pointed out that the market structure and service delivery system of hospitals differ substantially and this needs a framework which reflects the unique characteristics of this sector (Watkins 2000). Most of the attempts to understand the financial characteristics of hospitals have focused on deriving and extracting empirically relevant financial dimensions from a full set of financial and accounting information.

Using financial and accounting information provided in the profit and loss account and balance sheet, one can compute a large number of financial ratios. Often the problem one faces is which financial ratio to use, as each one may reflect the same or different financial performance dimensions. Accounting and financial analysis literature is replete with suggestions to use the information contained in a large number of financial ratios, to derive empirically smaller number of dimensions necessary to evaluate the performance of an organisation. Cleverley and Rohleder (1985), Zeller, Stanko and Cleverley (1996), and Watkins (2000), using US hospital data, have identified the following seven financial dimensions of hospitals to evaluate their performance: profitability, fixed asset efficiency, capital structure, fixed asset age, working capital efficiency, liquidity, and debt coverage. These dimensions are different from what one uses in the context of retail and manufacturing organisations.

We use a sample of 128 hospitals, for which data was obtained from the CMIE database. This is the only systematic data available on hospitals in India. The data pertains to the year 2003. The information provided by the CMIE database broadly contains key items from the profit and loss account and balance sheet. The size of the hospital sector is not known. Therefore, we do not know how much percent these 128 hospitals represent of the total hospital sector. The total revenue of the sample hospitals is Rs. 1204 crores and their total assets are Rs. 2463 crores. Based on the information available, various financial ratios were computed.

Given the data and information, it was not possible to compute all ratios generally suggested in financial management text books. However, the ratios included in the study reflect all key dimensions used in analysing performance of organisations and most of them have been used in studies in the US context.

As suggested in literature, we use the exploratory factor analysis to identify relevant dimensions of financial performance of hospital performance in India. This method is appropriate in situations where there is no well developed theory to explain and provide specific hypotheses

about dimensions of financial performance (Kline 1994). We use SPSS to carry out principal component analysis. We use 26 financial ratios of 128 hospitals as listed above in the analysis. The list of these ratios is provided in following table:

List of financial ratios used in the study:

• SALREV:	Salary as percent of total revenue
• ROYREV:	Royalty as per cent of total revenue
• PBITMARG:	PBIT margin defined as profit before interest and tax (PBIT) as percent of total revenue
• INTREV:	Interest expense as percent of total revenue
• TAXREV:	Provision for tax as percent of total revenue
• DIVPAYOUT:	Dividend payout defined as total dividends paid as percent of profit after tax
• DIVRATE:	Dividend rate defined as total dividends as percent of paid-up share capital
• RENW:	Return on net worth defined as profit after tax as percent of net worth
• TATO:	Total asset turnover defined as total revenue divided by total assets
• NFATO:	Net fixed asset turnover defined as total revenue divided by net fixed assets
• CATO:	Current assets turnover defined as total revenue divided by total current assets
• NCATO:	Net current asset turnover defined as total revenue divided by net current assets
• CETO:	Capital employed turnover defined as total revenue divided by capital employed
• CAHP:	Current asset holding period defined by current assets divided by revenue per day
• CLPP:	Current liability payment period defined by total current liabilities divided by revenue per day
• CR:	Current ration defined by current assets divided by current liabilities
• ROTA:	Return on total assets defined by PBIT divided by total assets
• ROCE:	Return on capital employed defined by PBIT to capital employed
• TDCE:	Total debt to capital employed
• DE:	Debt equity ratio
• TDNFA:	Total debt to net fixed assets
• ROE:	Return on equity defined by profit after tax (PAT) divided by net worth
• ACDEPGFA:	Accumulated depreciation to gross fixed assets
• GFANFA:	Gross fixed assets to net fixed assets
• INVSTTA:	Investments to total assets
• NFASAL:	Net fixed asset to salary

Bartlett's test rejected the null hypothesis of correlation matrix is an identity matrix. Table 3 provides the results of factor analysis. The factors with eigenvalues of more than one were retained and rotated. Factors were rotated using oblique rotation method using promax option in SPSS. This method assumes the factors to be correlated and not independent and has been suggested by Zeller, Stanko and Cleverley (1996) and Watkins (2000).

The following ten factors met this criterion:

- Financial Profitability
- Financial Structure
- Overall Efficiency
- Cost Structure
- Profit Appropriation
- Fixed Asset Age
- Credit Management
- Fixed Asset Intensity
- Liquidity
- Current Assets Efficiency

These factors account for 78 per cent of total explained variance of financial ratios of 128 hospitals. The inter-factor correlation among factors is not zero and ranges from low -0.20 to 0.40. Correlation component matrix is presented in Table 4. Correlation matrix of original variables used in the study is presented in Table 5.

IV. Discussion of Results

We use financial dimensions identified above to discuss and explain the financial performance of hospitals.

Financial Profitability: The key determinant of financial performance is the profit or surplus the organisations generates. This is the difference between revenue it generates and cost it incurs in generating these revenues. The surplus generation is important for the hospitals to remain sustainable. Also, the profitability measure of an organisation is an important factor to attract private capital. The profitability of hospitals can be measured at two levels. One is in terms of the amount of surplus generated, and the second is the return on capital invested. One most common surplus measure of a hospital is profit before interest and taxes (PBIT). In a sample of 128 hospitals, 31 per cent of hospitals have negative PBIT. As discussed, we need to use financial ratios to explain profitability, and based on the findings of this study, we use the following ratios: (a) PBIT margin, (b) ROCE, (c) ROE, and (d) Growth in net worth (defined by RE/NW). We have carried out distribution analysis of these four measures. These distributions are presented in Figure 1. The main observations are as follows:

- PBIT Margin: Average PBIT Margin of 128 hospitals is 6 per cent. About 38 per cent of sample hospitals have negative PBIT Margin. This means that these hospitals are not able to meet the interest burden, if they have borrowed any money to finance their operations.
- ROCE: This measure gives us the return on capital employed and is computed by dividing the PBIT by capital employed. The average ROCE of sample hospitals is 7.4 per cent. Fifty per cent of hospitals have ROCE less than 5 per cent.
- ROE: This measures the return the shareholders get on their capital invested in the hospital. From the shareholders point of view this is an important measure of profitability and determines whether the sector will be able to attract risk capital. The average ROE of sample hospitals is 2 per cent. Fifty per cent of hospitals have ROE of less than 3 per cent. About 45 per cent of hospitals have negative ROE.
- Growth in Net Worth: This measure indicates the growth an organisation can sustain and finance from internal resources. This measure is also known as sustainable growth. The average growth of sample hospitals is 0.2 per cent. The ability to sustain future growth

opportunities from internal sources is limited. The hospitals will be required to raise funds from external sources to finance any requirement.

Financial Structure: The financial structure depicts the way the organisation has decided to finance its various requirements. Broadly there are two major sources to finance the organisations and these are debt or borrowings and equity or owners funds. The borrowings create interest liability and if the organisation is not generating adequate surplus it may face difficulty in meeting these obligations. Also, the financial structure design has implications for overall financial health of organisation as it determines the long-term solvency of the organisation. We use following measures to discuss financial structure of hospitals: (a) total debt to capital employed, (b) debt-equity ratio and (c) total debt to net fixed asset. The main observations are as follows:

- Total debt to capital employed: This ratio measures the percent of total capital employed that has been financed by debt. The average debt to total capital employed ratio is 33 percent. About 1/4th hospitals have this ratio less than 3 per cent. This shows that debt has not been used very much till now by the hospitals
- Debt-equity ratio: The average debt-equity ratio is 0.97. About 50 per cent of hospitals have D/E ratio of less than 0.49. Overall the debt ratios are not high. About 1/4th hospitals have this ratio more than 1.25.
- Total debt to net fixed assets: The average of this ratio is 1.19. In case of 50 per cent of hospitals the ratio is 0.42 suggesting that a significant component of fixed assets are being financed using debt.

Overall Efficiency: Hospitals are generally capital intensive organisations. In our sample of 128 hospitals, the average fixed assets to total assets ratio is 54 per cent. The efficiency with which these assets are used, determines the financial health of the hospital. The importance of overall efficiency measure can be explained by the following relationships:

$$\begin{aligned}
 \text{Efficiency} &= \frac{NR}{CE} = \frac{\text{Net Revenue}}{\text{Capital Employed}} \\
 &= \frac{NR}{\text{Bed Days}(\text{Beds} \times 365)} \div \frac{CE}{\text{Bed Days}(\text{Beds} \times 365)} \\
 &= \text{Per Bed day Revenue} \times \text{CE Invested Per Bed Day Capacity} \\
 &= \left[\frac{\text{Number of Patients}}{\text{Patient days}} \times \frac{\text{Patient days}}{\text{Bed days}(\text{Beds} \times 365)} \times \frac{NR}{\text{Number of Patients}} \right] \div \frac{CE}{\text{Bed Days}(\text{Beds} \times 365)} \\
 &= \left[\frac{1}{ALOS} \times \text{Occupancy Rate} \times \text{Net Revenue Per Patient} \right] \div \text{CE Invested Per Bed Day Capacity}
 \end{aligned}$$

The above relationships suggest the following factors affect the efficiency:

- | | |
|-------------------------------------|---|
| • Average Length of Stay (ALOS): | Higher ALOS means lower efficiency |
| • Occupancy Rate (OR): | Higher occupancy rate means higher efficiency |
| • Net Revenue per patient: | Higher NR per patient means higher efficiency |
| • CE Invested Per Bed Day Capacity: | Higher CE Invested means lower efficiency |

There are significant interdependencies between various measures in the above equation. These need to be factored in before drawing any interpretations. For example, if the hospital is able to bring down the ALOS, it has more capacity to treat the patients. In case this capacity is not utilised and number of patients do not increase, it pulls down the occupancy rate and there is no change in efficiency. This happens because Occupancy Rate \times 365 / ALOS remain constant. The advantage gained by reduction in ALOS is exactly offset by decrease in OR.

Average length of stay (ALOS) has been one important indicator to measure hospital performance. It is considered to have significant influence on cost of care and can also be used as surrogate measure for cost. Generally hospitals having long ALOS may be relatively inefficient in the use of resources and those with low ALOS are considered to be efficient. Sometimes, however, ALOS is assumed to relate to quality (Thomas, Guire and Horvat 1997). Reducing length of hospital stay (ALOS) is a policy aim in many countries to regulate their health care systems and is thought to indicate efficiency. For example, it is generally viewed that longer than expected ALOS is indication of poor quality of care. The financial ratio of efficiency captures these interdependencies. The lower ALOS is reflection of good quality of care and is likely to enhance the image of the hospital. If a hospital is being managed efficiently and they ensure lower ALOS the number of patients will go up and it will result in improvement in the efficiency. It is well known that the bulk of the revenues are generated within the first 72 hours of a patient stay. Internationally, the best hospitals have an average length of stay of about 3.5 days. Similarly, on average across OECD countries, ALOS for acute care decreased from 9.6 days in 1985 to 6.9 days in 2000. ALOS fell particularly quickly during that period in the Nordic countries (Denmark, Finland and Sweden) and other European countries such as France and Austria.¹ Therefore, it is imperative to have a high turnaround of patients as this will help in improving the efficiency of the hospital. However, if the stay is too short, there may be an adverse effect on health outcomes or on the comfort and recovery of the patient which in turn could lead to higher readmission rates.

Higher efficiency also implies higher financial performance as return on capital employed is product of PBIT margin and efficiency (PBIT/Revenue \times Revenue/Capital Employed). Hospitals generally face the challenge of increasing margins. This is due to increasing competition and ability and willingness of people to pay for the services. However, by improving the efficiency, hospitals can strategically improve their financial performance. We have examined the followed two financial ratios which indicate the level of efficiency:

- Total assets turnover: This ratio is computed by dividing the total sales by total assets. The average of this ratio is 0.59. In case of 50 per cent of hospitals the efficiency is less than 0.45.
- Capital employed turnover: This ratio is arrived at after dividing the total sales by capital employed (CE). The average CE turnover is 0.90. Fifty percent of hospitals have this ratio below 0.56. Only 25 per cent of hospitals have this ratio above 1. This implies that in case of 75 per cent of hospitals the return on capital employed is below the PBIT margin.

This dimension of financial characteristic of hospitals is extremely important as it provides a useful link between the hospital's efficiency in utilising its resources and the financial performance of the hospital. As indicated above, this ratio is also related to average length of stay, occupancy rate, capital invested and average revenue generated per patient. In case of 75 per

¹ http://www.oecd.org/document/38/0,2340,en_2825_495642_16560422_1_1_1_1,00.html.

cent of hospitals having this ratio less than one has repercussions on overall financial performance of hospitals.

Cost Structure: Cost structure plays an important role in determining financial health of an organisation. Given the data, it has not been possible to divide this cost in fixed and variable components. We examine the following costs of hospitals:

- **Salary expense:** Hospital operations are people resource intensive. Salary represents the people resource intensiveness. The average salary of hospitals in our sample is 19 per cent. On the upper side, there is a hospital for which salary constitutes about 60 per cent of sales. The salary distribution is positively skewed. Half of the hospitals pay less than 15 per cent of their sales as salary.
- **Royalty Payments:** Royalty payment is another expenditure item. The average royalty paid by hospitals is about 4 per cent. This is not a significant item of cost items in a large number of hospitals. Fifty per cent of hospitals pay less than one per cent of sales as royalty.
- **Interest expense:** Interest constitutes one important item of expense. This is a reflection of the hospital's financing decision and how much they rely on debt financing. The average interest payment of hospitals is 8 per cent which is significantly high. The companies earn only about 6 per cent of sales as PBIT and pay 8 per cent of sales as interest expense. This has serious implications for the financial health of hospitals.

Profit Appropriation

After meeting interest obligations, profits are available for meeting income tax obligations and dividend policy decisions. We examine the following three ratios which reflect the appropriation of profits:

- **Dividend payout:** Dividend payout is computed by dividing the dividends by the profit after tax. This reflects, what per cent of profits available for distribution to shareholders, have been distributed to shareholders. The average dividend payout of hospitals is 6 per cent. Only a small number of hospitals pay dividends. In case of 75 per cent of hospitals the dividend payout is zero. This also suggests that hospitals in India have poor financial profitability and suffer from liquidity constraints. In times to come, hospitals will need more resources to support and sustain higher growth. Since they do not depend on debt, limited internal generations are going to put a lot of financial constraints on their plans.
- **Dividend rate:** The dividend rate is another measure of dividend decision of a hospital. This is calculated by dividing the dividend paid by paid-up-value of share capital. The average dividend rate of hospitals is 6 per cent.
- **Tax payment:** A part of profits, before they are distributed as dividends, are paid in the form of taxes to the government. Tax as per cent of sales is 2 per cent. Almost fifty per cent of hospitals in our sample do not pay any taxes. This reflects low profitability of hospitals and not having sufficient taxable incomes.

Fixed Asset Age

Technology plays a critical role in the hospital's operations. Most of the hospitals have invested in equipments and machines. The average investment in fixed assets will reflect this. Hospitals in our sample have an average investment of Rs. 143 million in gross fixed assets. There is one hospital which has investment to the tune of Rs. 4 billion. The age and use of these equipments will suggest the revenue generating ability of the hospitals. This also reflects the capital

expenditure requirements of hospitals in near future. We examine this financial dimension using the following two ratios:

- Accumulated depreciation to Gross Fixed Assets: This ratio reflects the age of fixed assets. The average of this ratio for hospitals in our sample is 0.30. About 3/4th of hospitals have this ratio less than 44 per cent. Relatively, the asset structure of hospitals in India is not old. The hospitals have the strength of having relatively recent technologies.
- Gross Fixed Assets to Net Fixed Assets: This ratio also reflects the age of fixed assets. The difference between gross fixed assets and net fixed assets is accumulated depreciation. The average ratio for sample hospitals is 1.58.

Credit Management

The operations of hospitals require adequate stock of various supplies and medicines to minimise the interruptions and ensure smooth running of operations. This would necessitate holding of stocks of these supplies. These are reflected in current assets of organisation. During the process of carrying these inventories, the hospital may also receive credit and this reduces the obligation to pay immediately at the time of purchase. We examine the following ratios:

- Current asset holding period: The current assets among other things include inventories and accounts receivables. We estimate the average holding period of these assets. The average current asset holding period of hospitals is 454 days. Fifty per cent of hospitals have this holding more than 140 days. About 1/4th hospitals have holding period of more than 290 days. This is a source of lower efficiency of hospitals.
- Average payment period: How do the hospitals sustain the high holding of current assets? Partly these high holdings get financed by the credit and in case of our sample hospitals; the average payment period is 835 days. This high credit period is because of some outliers which have a very high credit period. About 3/4th hospitals avail a credit period of 186 days. This partly finances the longer holding of current assets of hospitals.

Fixed Asset Intensity

Technology intensity of the hospital will be reflected by the use of fixed assets. We estimate the net fixed assets turnover. The median NFA turnover is 0.79 times. This suggests the use of fixed assets in generating the revenues is very low and this pulls down the overall efficiency. The lower efficiency of hospitals is because of less efficient use of fixed assets and also because of high holding of current assets. About 4 per cent of total assets are invested in investments which are generally outside the hospital. In 3/4th cases this is less than 1 per cent. This should not have affected the efficiency of hospitals in using assets to generate revenues.

Liquidity

Liquidity is defined as ability to meet short-term obligations. During the process of operations, hospitals have many short-term obligations to pay to its suppliers and repayment of obligations which become due. The ability of an organisation to meet its obligation is measured by the current ratio. The median current ratio is 1.29. About 3/4th hospitals have a current ratio of 2.96 and below. In case of 25 per cent of hospitals this ratio is less than one. Overall this ratio suggests good liquidity position of hospitals.

Current Assets Efficiency

About 30 per cent of the total assets of hospitals are invested in current assets. Therefore, the use of current asset would be an important determinant of the hospital's performance. We measure this by computing two ratios: current asset turnover and net current asset turnover. The median current ratio turnover of hospitals is 2.59 and net current assets turnover is 1.25.

V. Implications for the Hospital Sector

With the growing challenge of competition and hospitals in India receiving increasing global attention, the hospitals need to take necessary steps to improve their financial health. The findings presented in this paper suggest that all is not well with the financial health of hospitals in India and that they are financially vulnerable. The competitive position of these institutions becomes more difficult when they compete in a new environment. The hospital sector is generally capital intensive and operations with low margin and poor efficiency of capital employed of 0.56, will find it difficult to sustain quality of care. Their abilities to partner with the new insurance business are also likely to experience difficulties, as penetration of insurance in the initial years requires much higher financial soundness and higher risk capital. With a large number of hospitals not paying dividends and having problems with their earnings and as a large number of hospitals are not reporting profits, they may find it difficult to attract private capital. This further increases their vulnerability. A significant number of hospitals are facing financial strain in meeting their debt service obligation. Only a few hospitals fall in the category of having satisfactory financial performance.

The ability to manage operations efficiently is a key differentiator in many situations. The hospital sector thrives on the efficiency factor. The efficiency factor is embedded with various performance indicators of the hospital such as occupancy rates, average length of stay and capital invested in operations. Low efficacy indicates problems on these fronts. Though we do not have data on a number of these performance indicators, the efficiency variable provides a useful link here. The findings indicate that slack in efficiency has significant repercussions on the hospital performance indicators.

Setting-up hospitals and expanding their operations in India has not been smooth and has faced a number of challenges. There are examples of ambitious plans for setting-up hospitals that have ended up in failure. Poorly conceived projects based on unrealistic assumptions and not going through the battery of rigorous tests to test the financial viability, have been the root cause of such difficulties. The Hospital sector faced a wave of fresh investment in the 1990's after hospitals were awarded industry status and several private promoters turned towards banks and financial institutions to set-up hospitals. However, many of these projects have faced serious problems and many hospitals have struggled to succeed, performing below expectations. The findings of this study confirm the poor financial performance of a large number of hospitals. Some of the lessons are quite obvious. For example, a heavy reliance on borrowed funds leads to high interest burden. Given the poor profitability performance, the hospital may get into a vicious cycle of debt burden and will not be able to meet its obligations. High capital expenditure along with a long gestation period, high operational fixed costs, high technology up-gradation costs and interest burden, are some of the main features of the costs associated with hospitals. Their direct implication is considerable pressure to maintain cash flows. For example, a hospital has an interest obligation of Rs. 14 crore when its total income is Rs. 11 crore. How can the hospital sustain this contractual obligation without resorting to an increase in fee for its services? These financial compulsions may force these institutions to deviate from good practices and resort to unnecessary prescriptions and other unethical practices to increase their revenue. This also results in an increase in the cost of health care without much benefit emerging out of these increased expenditures. Most of the hospital ventures are set-up to fulfil a grand vision. But this is not backed by good planning and financial management practises.

The ability of hospitals to get effectively involved in health insurance initiatives also critically depends on their own financial health. Health insurance is a financial mechanism under which people are protected against catastrophic financial burden arising from unexpected illness or injury. Having a well functioning insurance system ensures pooling of resources to cover risks. Since health insurance is a tripartite agreement, it also assumes a financially sound provider. The

financially vulnerable provider will be a weak partner in the insurance setting. The health insurance sector in India is in a nascent stage and contributes only a small proportion of health expenditure. Future development in this sector is likely to experience a number of challenges.

Health expenditures also present a grim picture. According to various estimates, more than 80 percent of the expenditure on healthcare is “out of the pocket” in India. Only small percent of the population is covered by insurance of some form or the other. Given the financial vulnerability of hospitals, the charge structure will experience significant inflation. This will further tilt the public-private mix of health care expenditures in favour of private out-of-pocket costs.

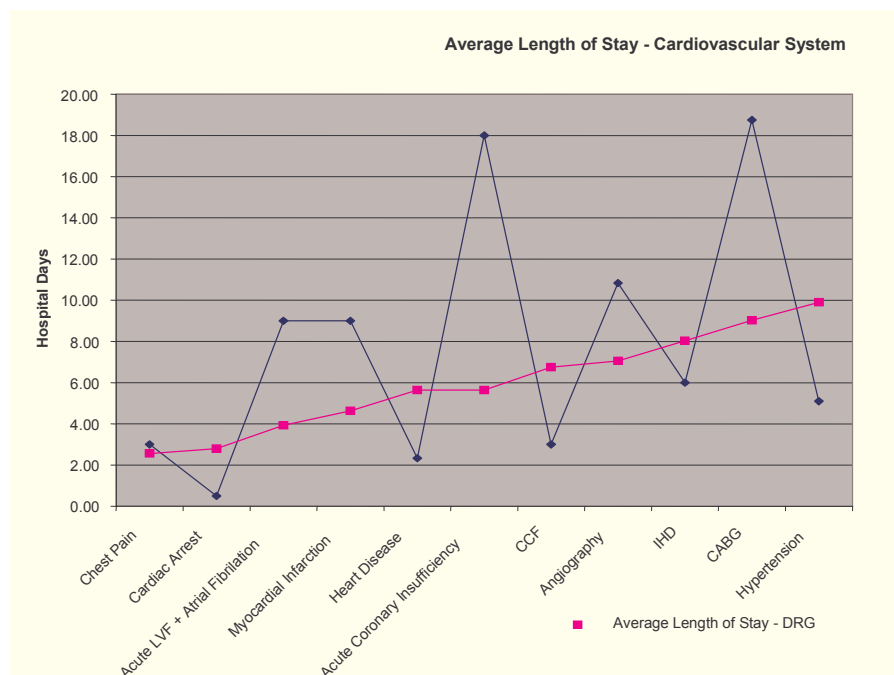
The financial planning for hospitals needs to assume greater importance in ensuring financial soundness of operations. High capital expenditure, high operational fixed costs, high technology up-gradation costs and interest burden are some of the key challenges facing the hospital sector. The direct implication of these is considerable pressure on maintaining cash flows and liquidity position. Serious liquidity problems in the past have led to the failure of many projects in the hospital sector and forced financial institutions, which were the major financiers of the hospital industry, to pull back their support from hospital financing. Now these institutions are cautious in financing such projects.

Financial vulnerability of hospitals is also because of high levels of imports of medical equipments. Frost and Sullivan study in 2001 estimated the Indian medical hardware market (equipment and devices) at Rs 65.32 billion in 2001². The total imports of medical equipments during 2003 have been in the range of about Rs. 150 billion. This is about 12 per cent of total private health expenditure. Each year we are adding medical equipments worth 12 per cent of the private expenditures (Bhat and Jain 2006). Hospitals dependent on these imports will be exposed to foreign exchange risks which further increases their financial vulnerability. The maintenance of these equipments also poses problems as the dependence on consumables and disposable components is high. This end of the market is dominated by a fragmented group of small local manufacturers. Since the hospitals would be required to pay in foreign currency, the price-sensitivity and for quality reasons the sourcing becomes quite important. This further jeopardise the financial position of the hospital. These difficulties are likely to ease out in the near future, as some foreign equipment manufacturers are planning to set-up their manufacturing plants in India. In the meantime hospitals need to engage in minimising these risks.

The current system of financing the hospital care is dependent on private out-of-pocket costs. This system of financing is known for its problems. It creates financial barriers to care and can have catastrophic implications on families needing hospital care. Health insurance is considered an option to take care of these problems. The health insurance system is dependent and will continue to be dependent on the private health care provision. The development of this alternative source of health care financing will depend on how the private sector behave and regulates itself. For example, there are no mechanisms to measure and monitor the quality of care. This remains an issue in most systems. Provider-induced demand, defensive medicine, unnecessary medication, diagnostics and surgery are well known problems in the private health care sector (Bhat 1999). All these lead to problems and issues of quality of care. Other aspects of quality are linked to improvements in information systems and agreement on a minimum benefits package, quality standards, and financial solvency requirements. There is significant variation in quality of care provided by different facilities. To illustrate this point, Bhat and Rajagopal (2005) examines the average length of stay of 621 Medclaim claims data and compares it with the suggested average

² www.sebi.gov.in/dp/dolphin.pdf

length of stay under Diagnostic Related Group (DRG) system in the United States. Average length of stay is assumed to relate to quality (Thomas, Guire and Horvat 1997). For illnesses of the cardiovascular system and its sub-systems, the plot of actual length of stay and what is proposed under the DRG system for various sub-classes of illnesses from less severe to highly severe is given. The analysis suggests a wide fluctuation in the actual length of stay in India against the recommended DRG benchmark. This also has implications for cost of health care and costs vary across providers and facilities.



It health insurance system is also vulnerable to out-of-pocket cost system of reimbursement. The development of standards of provision of care and agreement on pre-determined rates for reimbursements is two critical factors to develop insurance based system of financing. Cost based out-of-pocket reimbursements leads to high cost and poor quality of care. It is obvious because the private providers in India are so large and fragmented that regulators find it difficult to develop appropriate mechanism to control them. In the absence of epidemiological data and less systematic information health insurance providers also find it difficult to develop appropriate pricing of products which take into account epidemiological data and are adjusted for risks.

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**Table 1: Descriptive Statistics of Financial and Accounting Variables
(Number of hospitals 128 and amounts in thousands)**

	Mean	Std Dev	Min	Max	Skewness	Kurtosis	Q1	Me	Q3
REV	94020	396704	69	3965200	8.04	74.03	3947	13287	39004
SAL	14614	54462	0	470200	6.72	50.70	520	2196	7861
ROY	1431	7024	0	76400	9.70	102.48	0	115	642
EXP	78130	331759	2	3371500	8.30	78.46	3468	13239	35261
PBIT	15861	68781	-8901	593700	6.43	47.92	-102	639	5262
INT	5383	22195	0	235400	9.02	91.54	17	508	3939
PBT	10477	52283	-18100	392038	5.88	39.24	-676	249	2741
TAX	3525	18179	-2260	142330	6.05	40.22	0	2	180
PAT	6952	35084	-18100	249708	5.65	36.85	-676	237	2408
DIV	1675	10890	0	100700	7.81	65.28	0	0	0
RE	5277	29106	-18100	249708	6.18	45.78	-690	223	2045
PUC	38903	119609	0	916900	5.98	41.37	2255	7646	28971
RS	48955	228399	0	2014600	7.28	57.84	0	747	14202
NW	87858	312083	323	2877900	6.89	55.80	5980	13969	47509
TD	55097	186065	0	1711100	6.68	54.17	375	5324	33339
GFA	143233	439576	0	3889800	6.15	46.65	5311	22512	84506
ACCDEP	37267	131936	0	1091100	6.52	47.65	663	7067	20811
NFA	105966	322642	0	2798700	5.97	44.11	3466	15672	62930
INVEST	11595	81897	0	829100	8.71	82.32	0	0	357
CA	59279	244583	60	1693300	5.72	35.35	1944	5241	15842
CL	49453	199712	2	1578079	6.02	40.94	856	3787	14503
NCA	9826	97800	-477800	867000	4.75	52.70	-535	857	5111
MISEXP	2408	15691	0	149700	8.11	70.39	0	15	155
ACCLOSS	13160	57629	0	545600	7.48	63.68	0	0	4909
TA	192408	584222	325	5415300	6.38	52.39	9774	27758	107150
CE	137241	431016	323	4121100	6.94	59.66	7777	24001	92207
ADJNW	74698	314524	-420100	2877900	6.81	55.26	2518	9870	33777

**Table 2: Descriptive Statistics of Financial Ratios
(Number of hospitals 128)**

	Mean	Std Dev	Minimum	Maximum	Skewness	Kurtosis	Q1	Me	Q3
SALREV	0.19	0.14	0.00	0.60	0.98	3.49	0.0872	0.1514	0.2598
ROYREV	0.04	0.13	0.00	1.33	8.76	86.99	0.0000	0.0086	0.0332
PBITMARG	0.06	0.35	-1.64	1.00	-1.49	10.13	-0.0150	0.0891	0.1967
INTREV	0.08	0.14	0.00	0.97	3.39	17.39	0.0039	0.0410	0.0882
PBITINT	0.06	0.35	-1.64	1.00	-1.49	10.13	-0.0150	0.0891	0.1967
TAXREV	0.02	0.04	0.00	0.28	4.28	24.12	0.0000	0.0007	0.0102
DIVPAYOU	0.06	0.23	0.00	1.67	4.58	26.45	0.0000	0.0000	0.0000
DIVRATE	0.06	0.47	0.00	5.25	10.72	118.60	0.0000	0.0000	0.0000
RENEW	0.00	0.41	-3.50	1.33	-4.64	44.04	-0.0570	0.0222	0.0956
TATO	0.59	0.58	0.00	4.98	3.82	27.11	0.2296	0.4501	0.7578
NFATO	6.13	29.02	0.00	248.72	7.46	58.80	0.4409	0.7853	2.0310
CATO	4.11	5.79	0.06	55.46	5.86	49.64	1.2748	2.5937	5.2761
NCATO	6.17	37.67	-99.09	244.67	3.05	18.61	-2.7192	1.2463	6.1937
CETO	0.90	1.38	0.00	9.42	4.64	26.82	0.2829	0.5619	1.0022
CAHP	454.61	1030.41	6.58	6335.04	3.89	18.11	69.1830	140.7400	286.6400
CLPP	835.44	4561.17	2.15	49162.28	9.54	99.59	48.4930	108.1100	185.9900
CR	44.85	425.01	0.03	4797.33	11.01	123.12	0.8108	1.2900	2.9642
ROTA	0.05	0.12	-0.53	0.54	-0.22	8.82	-0.0076	0.0419	0.1060
ROCE	0.07	0.17	-0.50	0.73	0.52	6.87	-0.0093	0.0532	0.1420
TDCE	0.33	0.28	0.00	0.89	0.22	1.67	0.0296	0.3268	0.5618
DE	0.97	1.33	0.00	8.03	2.31	9.68	0.0305	0.4854	1.2821
TDNFA	1.19	3.96	0.00	35.54	6.81	53.45	0.0674	0.4219	0.7520
ROE	0.02	0.44	-3.50	2.25	-2.92	36.97	-0.0570	0.0322	0.1087
ACDEPGFA	0.30	0.19	0.00	0.83	0.32	2.54	0.1517	0.2904	0.4201
GFANFA	1.58	0.68	0.00	5.78	2.78	15.08	1.1789	1.4093	1.7244
INVSITA	0.04	0.13	0.00	0.97	4.64	27.96	0.0000	0.0000	0.0128
NFASAL	59.94	354.41	0.00	3567.70	8.39	78.33	2.0892	6.3689	12.6920

Table 3: Summary of Factor Analysis Results

Financial ratios	Financial dimensions										Current Assets Efficiency
	Performance	Financial Leverage	Overall Efficiency	Cost Structure	Profit Appropriation	Fixed Asset Age	Credit Management	Fixed asset Intensity	Liquidity		
1. PBITMARG	0.3510										
2. RENW	1.0890										
3. ROTA	0.6830										
4. ROCE	0.6710										
5. ROE	1.0780										
6. TDCE		0.7690									
7. DE		0.9290									
8. TDNFA		0.7370									
9. TATO			0.9740								
10. CETO			0.9620								
11. SALREV				-0.9410							
12. ROYREV				-0.9450							
13. INTREV											
14. TAXREV					0.9580						
15. Div/Payout			0.4210		0.5230						
16. DIVRATE					0.8920						
17. ACDEPGFA						0.9570					
18. GFANFA						0.9800					
19. CAHP							0.6040		0.4410		
20. CLPP		0.4480					0.6210				
21. NFASAL							0.9110				
22. NFATO								0.8690			
23. INVSTTA								0.9050			
24. CR									1.0360		
25. CATO										-0.6850	
26. NCATO											0.7940

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization. Rotation converged in 9 iterations. 0.35

Table 4: Component Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1	1.00									
2	0.12	1.00								
3	0.25	-0.04	1.00							
4	0.33	0.22	0.07	1.00						
5	0.43	0.04	0.24	0.19	1.00					
6	0.04	-0.05	0.13	-0.20	-0.04	1.00				
7	0.04	-0.11	-0.18	-0.18	0.07	-0.11	1.00			
8	0.19	-0.09	0.03	-0.12	0.18	-0.01	0.32	1.00		
9	0.25	0.01	-0.01	0.09	0.28	-0.05	0.28	0.31	1.00	
10	-0.10	-0.02	-0.09	-0.03	-0.08	-0.03	0.03	-0.02	0.01	1.00

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.

Table 5: Correlation Matrix

1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
1	1.00																										
2	0.83	1.00																									
3	-0.35	-0.49	1.00																								
4	-0.01	-0.03	-0.11	1.00																							
5	-0.13	-0.12	0.33	-0.18	1.00																						
6	-0.04	-0.03	0.14	-0.11	0.44	1.00																					
7	-0.05	-0.05	0.19	-0.07	0.58	0.15	1.00																				
8	-0.27	-0.28	0.41	-0.21	0.14	0.04	0.10	1.00																			
9	0.13	0.07	0.07	-0.24	0.03	0.36	-0.03	0.02	1.00																		
10	-0.10	-0.08	0.13	-0.11	0.03	0.06	0.00	0.03	0.11	1.00																	
11	-0.01	-0.04	0.00	0.05	-0.11	-0.03	-0.07	-0.02	0.07	-0.07	1.00																
12	-0.06	-0.06	0.01	0.01	-0.04	-0.04	-0.02	0.05	0.11	-0.02	-0.17	1.00															
13	0.01	-0.02	0.04	-0.20	0.05	0.30	0.04	0.04	0.86	0.12	-0.01	0.09	1.00														
14	-0.15	-0.11	0.14	-0.13	0.05	-0.07	0.15	0.03	-0.27	0.00	-0.25	-0.06	-0.15	1.00													
15	-0.18	-0.14	0.28	-0.08	0.02	-0.03	0.10	0.13	-0.14	-0.02	-0.07	-0.03	-0.08	0.15	1.00												
16	-0.11	-0.08	0.22	-0.06	-0.03	-0.03	-0.01	0.02	-0.09	0.05	-0.02	-0.02	-0.06	0.37	-0.02	1.00											
17	-0.36	-0.51	0.69	-0.10	0.39	0.24	0.11	0.64	0.24	0.06	-0.01	0.04	0.15	-0.07	0.01	0.02	1.00										
18	-0.34	-0.44	0.63	-0.13	0.51	0.28	0.40	0.67	0.26	0.06	-0.05	0.04	0.30	-0.01	0.03	0.00	0.90	1.00									
19	-0.09	-0.10	0.11	0.40	-0.21	-0.10	-0.11	-0.08	-0.06	-0.16	0.06	0.10	-0.10	-0.26	0.14	-0.12	0.08	-0.01	1.00								
20	-0.11	-0.10	0.16	0.23	-0.18	-0.11	-0.08	-0.10	-0.06	-0.10	-0.05	0.10	-0.08	-0.15	0.30	-0.07	0.01	-0.05	0.85	1.00							
21	0.00	-0.02	0.23	-0.02	0.01	-0.01	-0.02	0.13	-0.06	0.12	-0.11	-0.01	-0.06	0.08	0.12	-0.03	0.08	0.04	0.28	0.49	1.00						
22	-0.26	-0.25	0.40	-0.20	0.19	0.10	0.12	0.98	0.04	0.03	-0.03	0.04	0.06	0.02	0.12	0.01	0.66	0.70	-0.05	-0.07	0.12	1.00					
23	0.15	0.13	-0.03	-0.08	0.09	0.08	0.03	0.14	0.18	0.04	0.06	0.00	0.08	-0.17	-0.15	0.04	0.07	0.04	-0.05	-0.05	0.13	0.14	1.00				
24	0.09	0.09	-0.02	-0.07	0.03	0.04	0.00	0.14	0.14	0.07	0.02	0.04	0.05	-0.11	-0.08	0.01	0.03	0.00	-0.03	-0.01	0.09	0.13	0.88	1.00			
25	-0.13	-0.13	0.06	-0.12	-0.02	-0.04	-0.03	0.04	-0.17	0.42	-0.15	-0.04	-0.13	0.19	-0.02	-0.01	0.00	-0.02	-0.24	-0.17	0.10	0.03	-0.19	-0.11	1.00		
26	-0.13	-0.10	-0.08	-0.04	-0.05	-0.04	-0.02	0.00	-0.15	-0.04	-0.09	-0.02	-0.09	0.51	0.19	-0.02	-0.08	-0.09	-0.14	-0.09	-0.05	-0.01	-0.13	-0.08	-0.04	1.00	

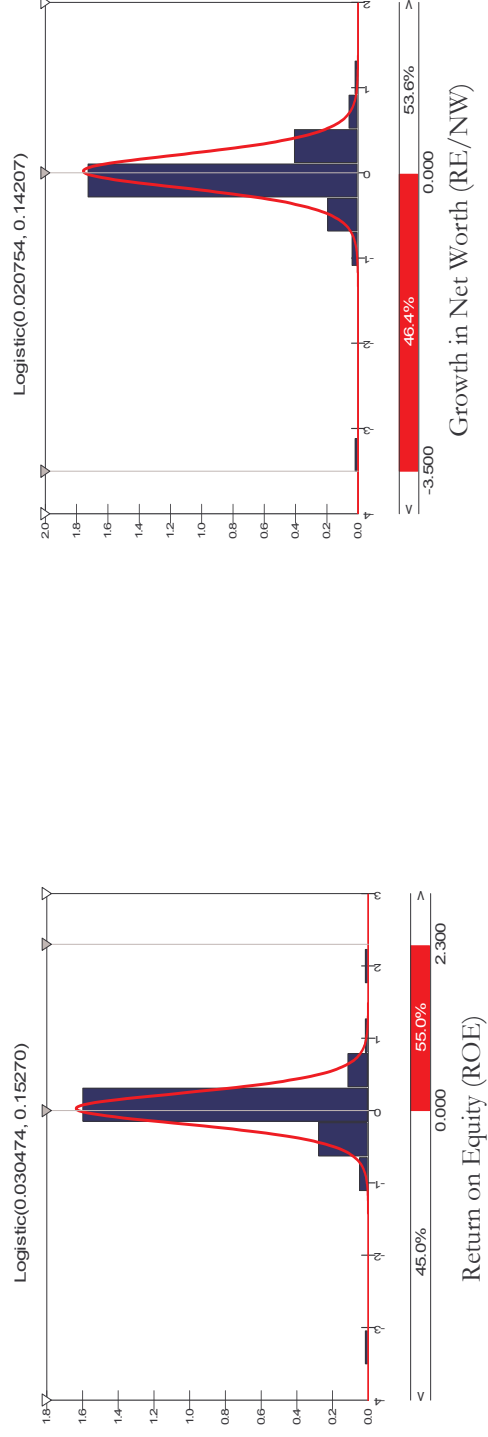
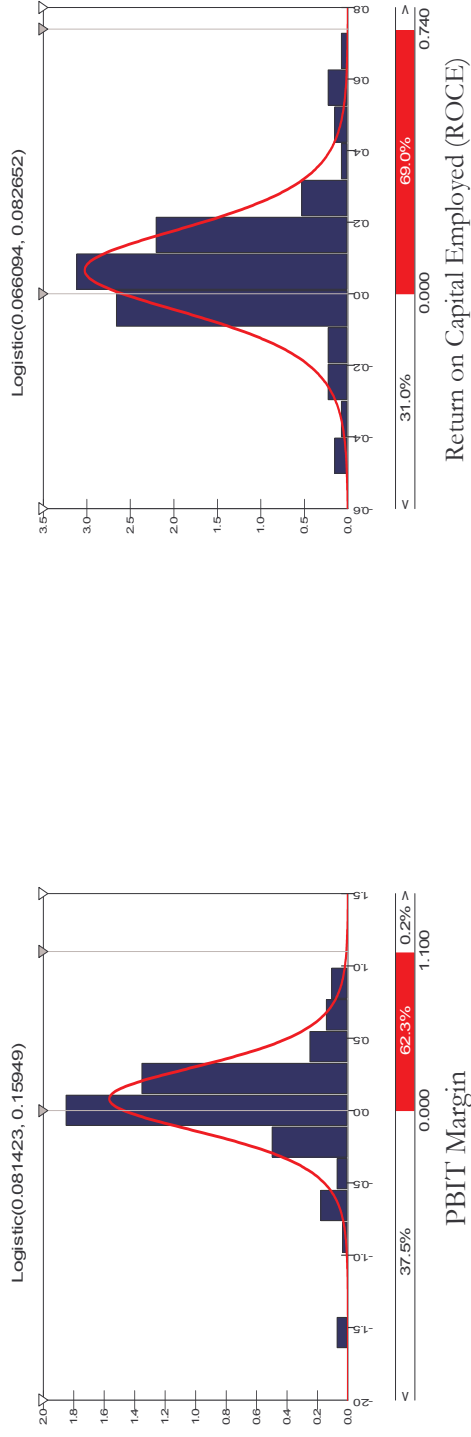


Figure 1: Financial Performance of Hospitals in India

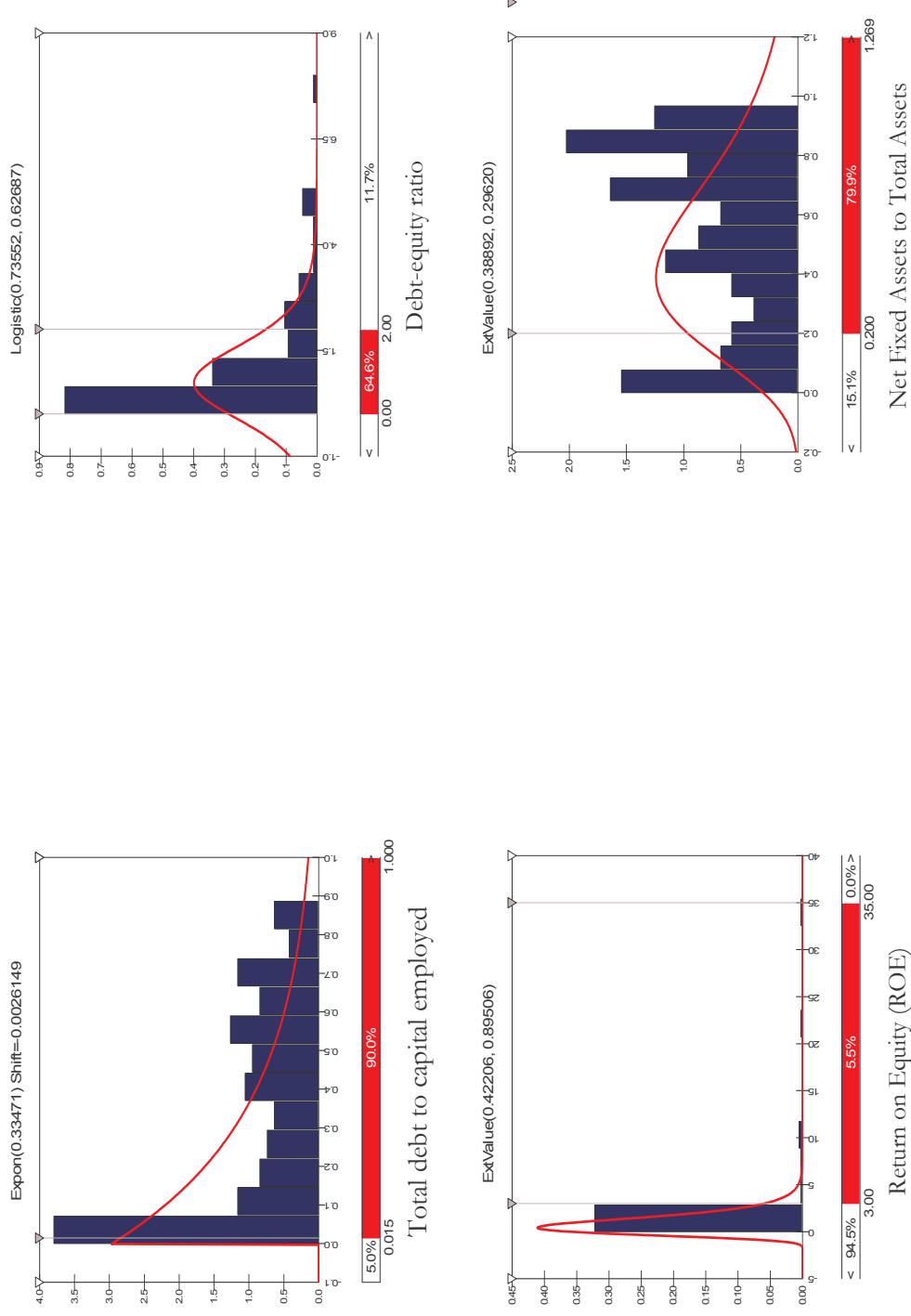


Figure 2: Financial Structure of Hospitals in India

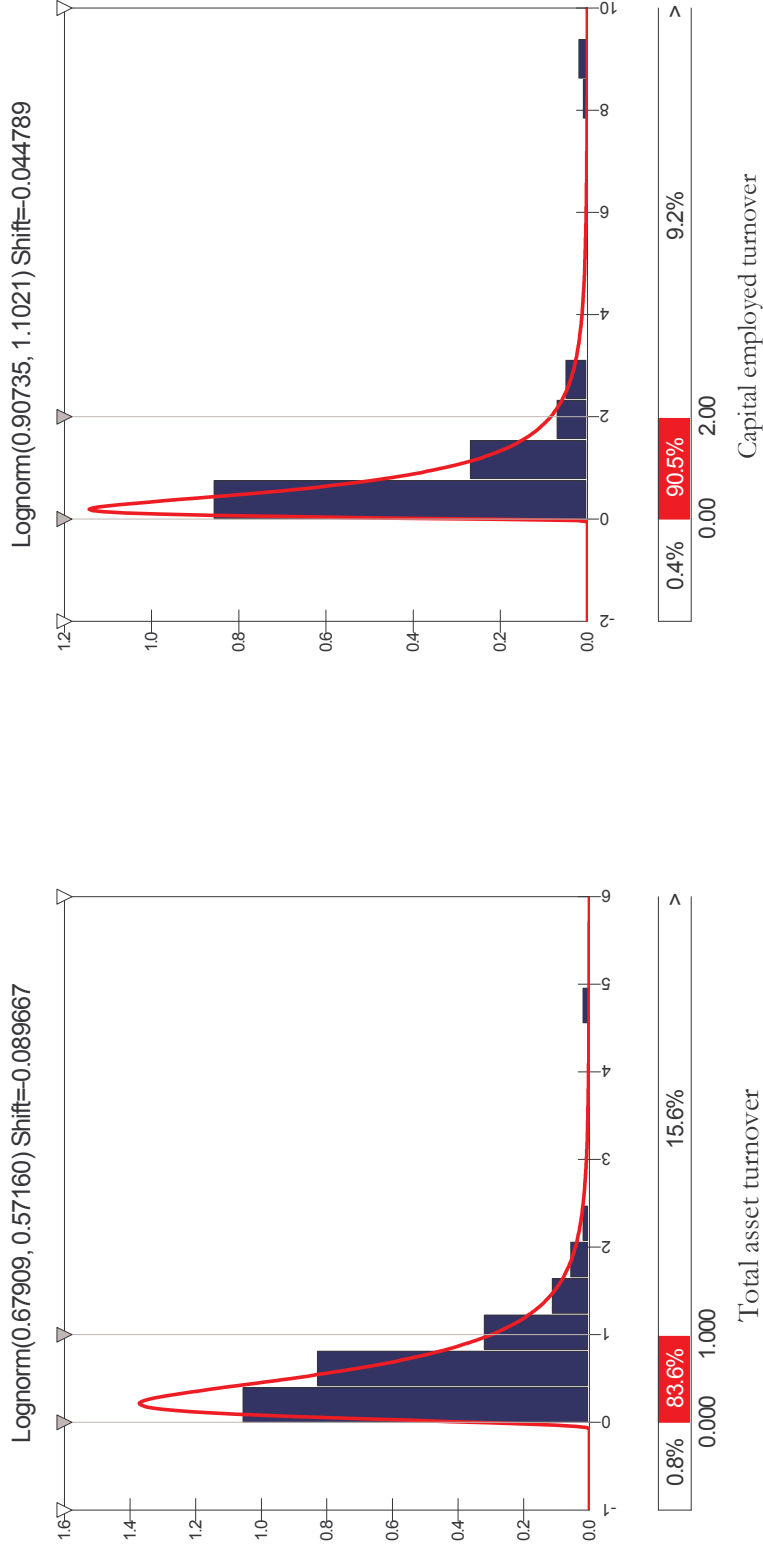


Figure 3: Overall efficiency

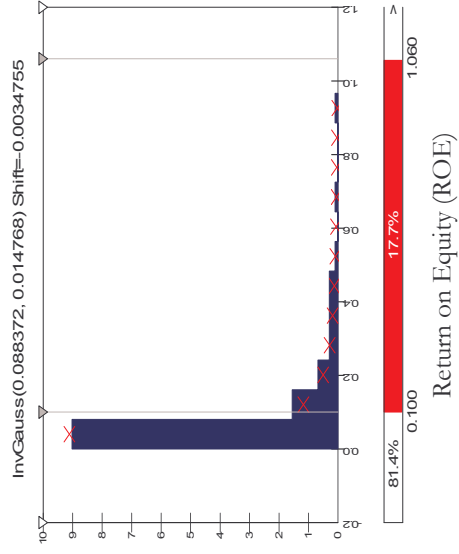
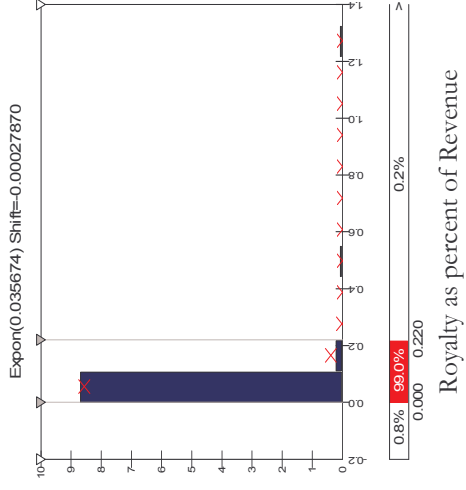
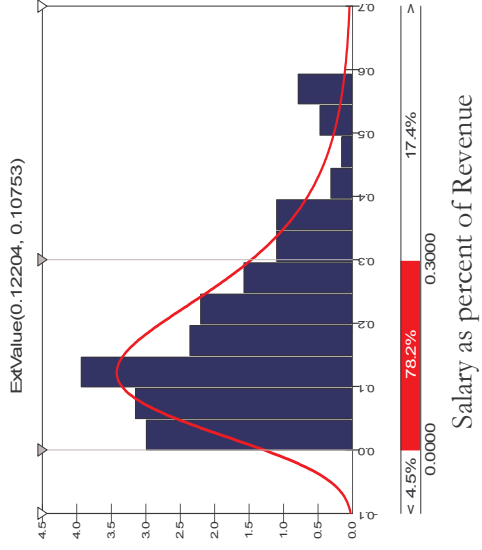


Figure 4: Cost Structure

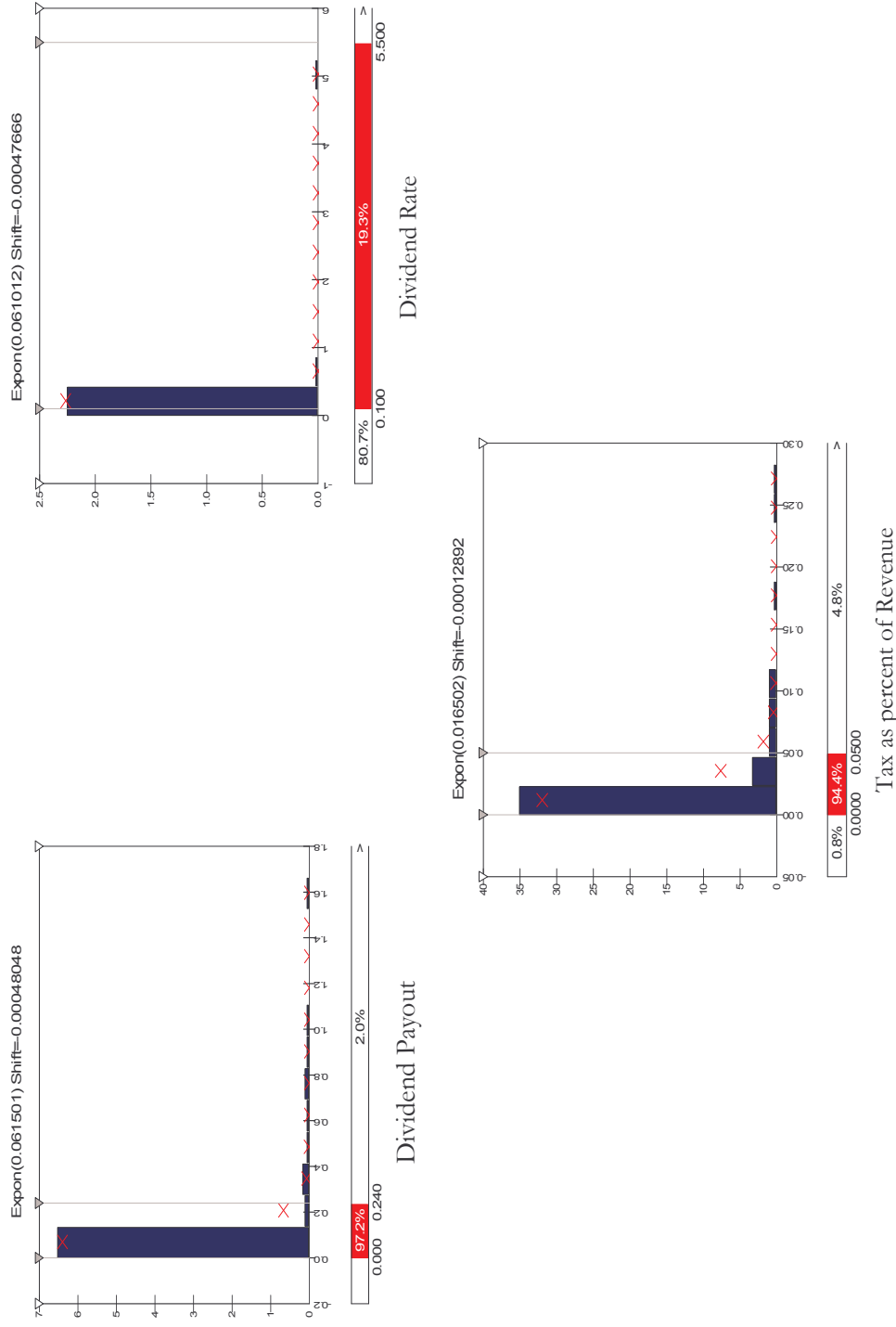


Figure 5: Profit Appropriation

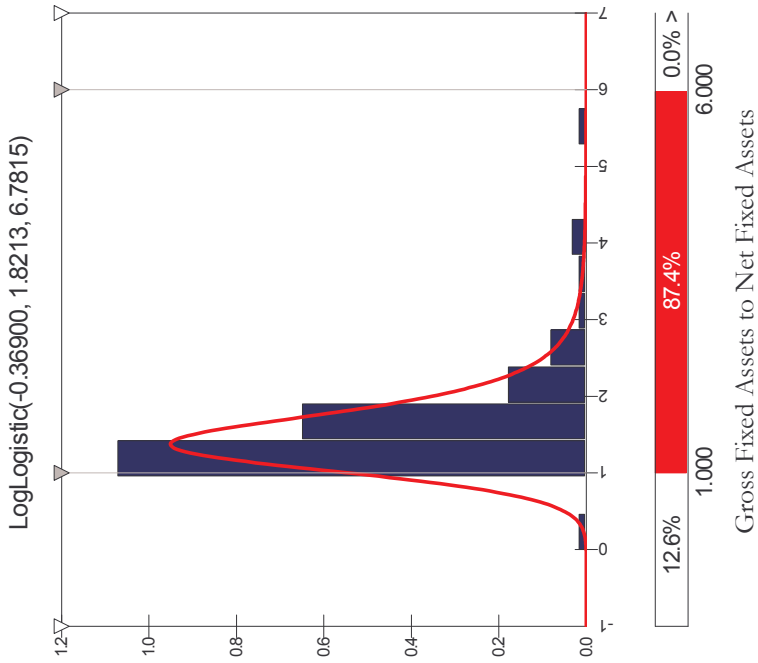
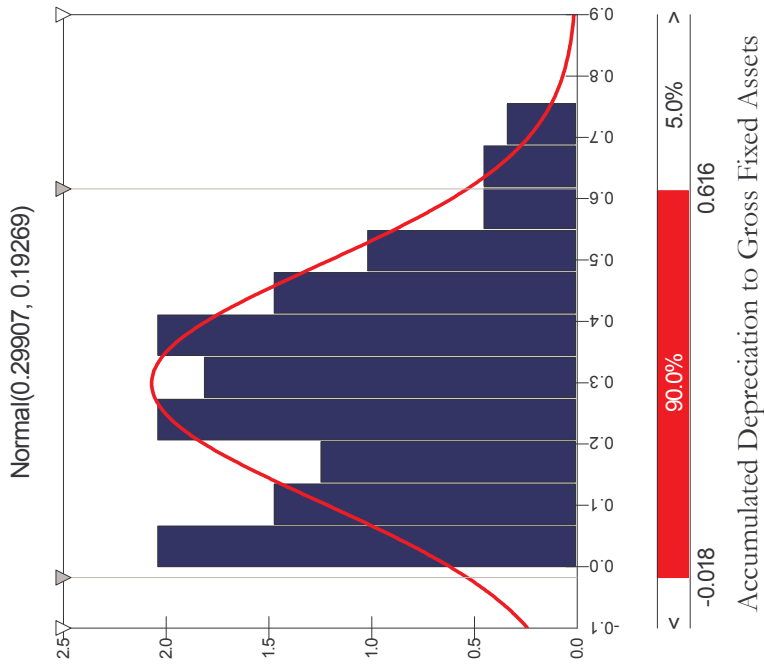
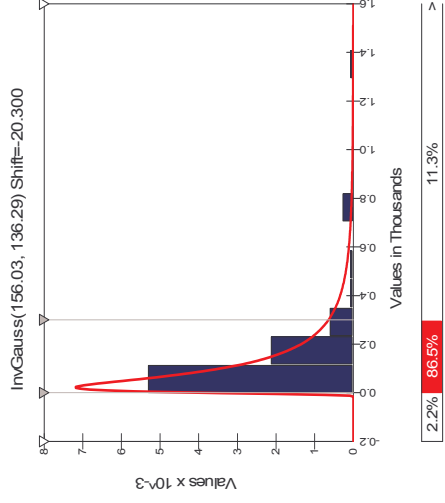
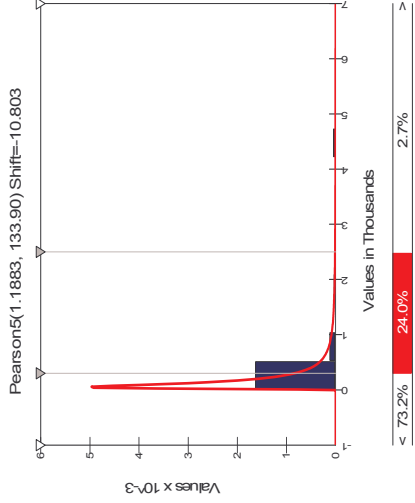


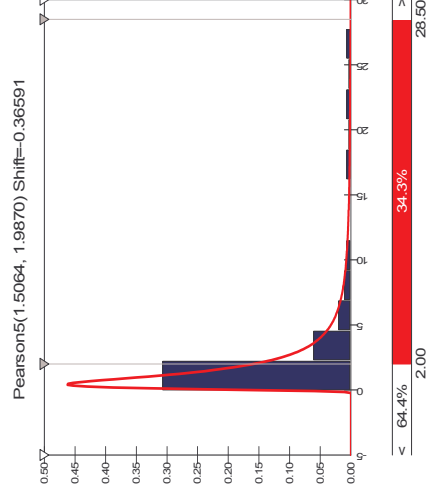
Figure 6: Fixed Asset Age



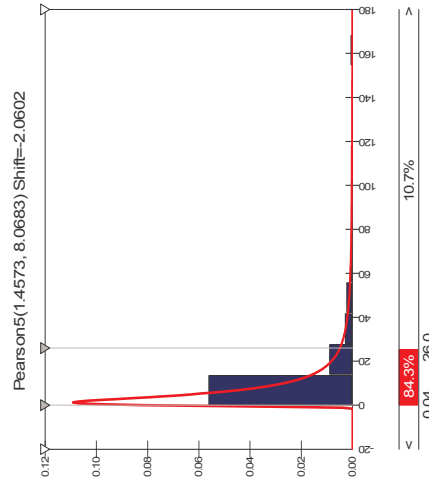
Average Payment Period



Current Asset Holding Period



Current Ratio



Net Fixed Assets to Salary

Figure 7: Credit Management and Liquidity

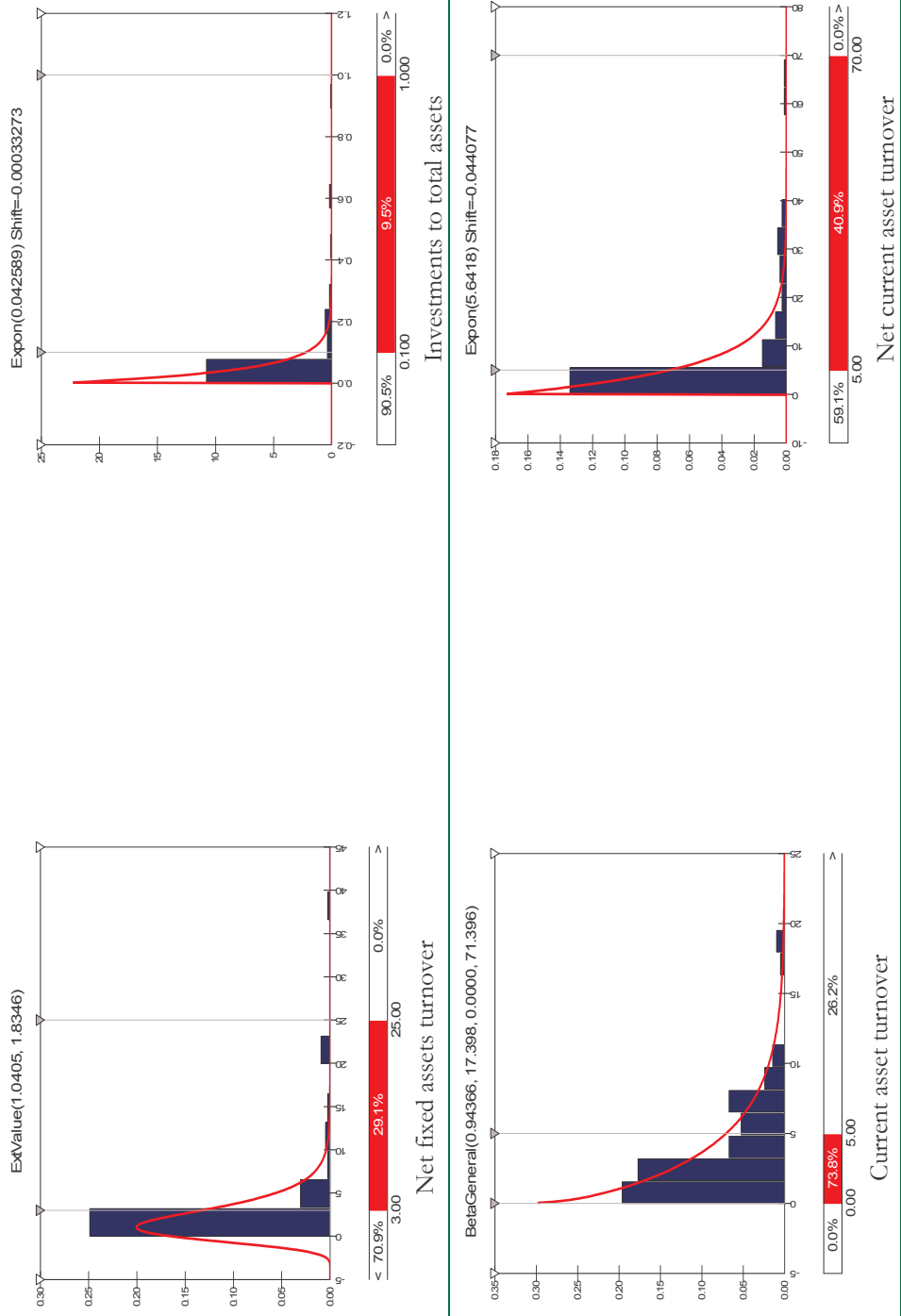


Figure 8: Asset Intensity

Appendix: List of hospitals included in the study

1. A D R C Health Care	65. Ketki Research Institute Of Medical Sciences
2. A D S Diagnostic	66. Lotus Hospitals & Research Centre
3. A P J Medical Foundation	67. Ludhiana Health Care
4. Advanced Medicare & Research Institute	68. Mamata Health Services
5. Aga Khan Health Service (India)	69. Mandke Foundation & Medical Research Centre
6. Amar Diagnostic Centre & Hospital	70. Marathwada Medical Research & Rural Devp. Institution
7. Amaravathi Diagnostics	71. Medinova Diagnostic Services
8. Anand Healthcare	72. Meridian Medical Research & Hospital
9. Anand Surgical Hospital	73. Metropolitan Laboratory & Nursing Home
10. Andhra Health Diagnostic Services	74. Miot Hospitals
11. Apollo Gleneagles Hospitals	75. Modern Hospital Kodungallur
12. Apollo Hospitals Enterprise	76. Nagar Hospital & Research Centre
13. Arcot Hospitals & Enterprises	77. Nairsons Medical Services
14. Avian Remedies	78. Onnu Kurac Ayiram Yogam Mission Hospital
15. Bahuleyan Charitable Foundation	79. Orient Hospital
16. Bengal Chemists & Druggists Association	80. P M Stone Clinic
17. Bhagirathi Health Care Products	81. Palakkad Medical & Research Centre
18. Billroth Hospitals	82. Pandima Diagnostic Services & Research Institute
19. C D R Health Care	83. Peerless Hospitex Hospital & Research Center
20. C T K Hospitals	84. Peoples M R I Scan Centre
21. Cambridge Healthcare	85. Personal Point Care
22. Comprehensive Leprosy Care Project & Medical Aid Association	86. Prena Hospitals
23. Corona Healthcare	87. Pulikkal Medical Foundation
24. Crescent Medical Centre	88. Pushpawati Singhanian Research Institute For Liver, Renal & Digestive Diseases
25. Crystal Hospitals	89. R B Medicare
26. Damani Hospital	90. R M C Med
27. Deenabandhu Hospital (Mannarkkad)	91. Raghava Health Care
28. Deepak Medical Foundation	92. Raj Scanning
29. Devaki Hospital	93. Remedy Hospitals
30. Dhanvantri Jeevan Rekha	94. Rohini C T Scan Centre
31. Divine Medical Centre	95. Ruia Hospitality
32. Dr. Agarwal'S Eye Hospital	96. S K V United Hospitals
33. Dr. Agarwal'S Pharma	97. S M Loyalka Medical Centre
34. Dr. Batra'S Positive Health Clinic	98. Sathya Nursing Home
35. E Medlife.Com Limited	99. Seahorse Hospitals
36. Eastern Diagnostics & Research Centre	100. Seasons Healthcare
37. Eisha Patients Care (India)	101. Shah Medical & Surgical Co.
38. Endurance Healthcare	102. Sibar Medicare
39. Escorts Heart Institute & Research Centre	103. Siddhartha Hospitals
40. Escorts Hospital & Research Centre	104. Sir Edward Dunlop Hospitals (India)
41. Eureka Medico Products	105. Sree Sankara Community For Ayurveda Consciousness
42. Family Health Plan	106. Sterling Hospitals
43. Fort Hospital	107. Sunlit Hospital
44. Fort Sean	108. Suretech Hospital & Research Centre
45. G D Birla Medical Research & Education Foundation	109. Surya Ayurvedics
46. G G Medical Health Care	110. Swas Health Products
47. G M Modi Hospitals Corpn.	111. Tamilnadu Medical Services Corpn.
48. Global Care Hospital	112. Tantia Medical Services
49. Gouri Hospitals	113. Thind Eye Hospital
50. H M D Healthcare	114. Trichur Heart Hospital
51. H S C C (India)	115. Twenty First Century Medicare
52. Harvey Heart Hospitals	116. Unique Home Health Care
53. Heritage Hospitals	117. Unity Medicare
54. Hi-Tech Trauma & Critical Care Hospitals	118. Uttam Hospital & Research Center
55. Hisar Medical Diagnostic & Hospital	119. Valiant Healthcare
56. Indo Global Enterprises	120. Valluvanad Hospital Complex
57. Indraprastha Medical Corpn.	121. Varishield Healthcare
58. J M D Medicare	122. Visakha Hospitals & Diagnostics
59. Jeevan Mala Health Care	123. Vita Diagnostics
60. Jenson Healthcare	124. Westinn Hospitality Services
61. K G Healthcare	125. Wockhardt Hospital
62. Kailash Hospital & Research Centre	126. Wodehouse Gymkhana
63. Kalinga Hospital	127. Yogeshwar Healthcare
64. Keshlata Cancer Hospital	128. Zubeda Hospitals