

**DISCOUNTED CASH FLOW VALUATION OF BANGKOK DUSIT  
MEDICAL SERVICES PUBLIC COMPANY LIMITED**



**A THEMATIC PAPER SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE OF MASTER OF MANAGEMENT  
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entitled  
**DISCOUNTED CASH FLOW VALUATION OF BANGKOK DUSIT  
MEDICAL SERVICES PUBLIC COMPANY LIMITED**

was submitted to the College of Management, Mahidol University  
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## **DISCOUNTED CASH FLOW VALUATION OF BANGKOK DUSIT MEDICAL SERVICES PUBLIC COMPANY**

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### **ABSTRACT**

Stock market had been an investment portal for most of investors who seek to maximize their return. Since stock market nowadays has a very high volatility, it is very difficult to determine the true value of a particular stock as the stock price is also varied with stock market's index. We want to find a stock value, by comparing a firm's performance, such as return over stock price, to the similar firm in the same sector (similar supplier, customer, business operation)

For this research, we focused on Bangkok Dusit Medical Services Public Company Limited (BDMS) and compare to other comparable firm in Healthcare sector. We have found that BDMS's stock price is relatively high compare with the current price in the market. Statistically, it would be a great opportunity to start in this stock as they will likely generate higher return, compare with the market, and justify the require rate of return from the investor's point of view.

**KEY WORDS:** Discounted Cash Flow Valuation / Healthcare Sector / BDMS

67 pages

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## CHAPTER I

### HIGHLIGHTS

Bangkok Dusit Mediact Services Public Company Limited is the largest Private Hospital Chain in Thailand: With 6 hospital brands, Bangkok Hospital, Phayathai, Samitivej, Paolo, etc. In 2015, total number of hospital reach 42 hospitals with 4 under construction hospital in pipeline, Smitivej Chonburi, Jomtien, Paolo Rangsit and Bangkok Surat Hospital, which plan to start in 2016 and 2017 accordingly. With target of 50 Hospitals in 2019, BDMS will reach an total available bed of 8,000 beds.

**Table 1.1 Financial highlights**

| Period as of                               | 2011   | 2012   | 2013   | 2014   | 2015E  |
|--|--------|--------|--------|--------|--------|
| <b>Balance Sheets (Million Baht)</b>       |        |        |        |        |        |
| Total Assets                               | 58,792 | 68,461 | 76,399 | 93,228 | 98,920 |
| Total Liabilities                          | 25,900 | 30,074 | 33,755 | 44,274 | 44,452 |
| Total Shareholders' Equity                 | 32,892 | 38,387 | 42,644 | 48,954 | 54,468 |
| <b>Income Statements (Million Baht)</b>    |        |        |        |        |        |
| Revenue from Hospital Operations           | 35,224 | 44,307 | 49,170 | 54,341 | 61,242 |
| Total Operating Income                     | 36,726 | 45,994 | 51,158 | 56,588 | 63,125 |
| Net Profit (Excluding Non-Recurring Items) | 3,907  | 5,778  | 6,113  | 7,109  | 7,641  |
| Net Profit                                 | 4,386  | 7,849  | 6,261  | 7,394  | 8,651  |
| <b>Liquidity Ratio</b>                     |        |        |        |        |        |
| Current Ratio (x)                          | 1.2    | 0.8    | 0.9    | 1      | 1.2    |
| Quick Ratio (x)                            | 1      | 0.7    | 0.8    | 0.9    | 1.1    |
| Inventory Turnover (x)                     | 33     | 32.2   | 38.8   | 35.9   | 34.3   |

**Table 1.1 Financial highlights (cont.)**

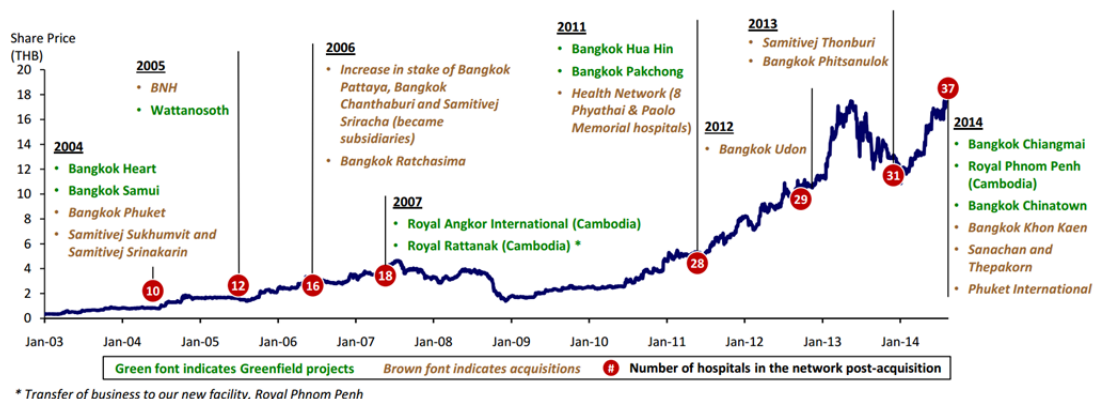
| Period as of                   | 2011 | 2012 | 2013 | 2014 | 2015E |
|--------------------------------|------|------|------|------|-------|
| <b>Profitability Ratio (%)</b> |      |      |      |      |       |
| Gross Profit Margin            | 34.7 | 35.7 | 34.8 | 34.9 | 38.0  |
| EBIT to Net Sale               | 17.6 | 18.8 | 17.2 | 17.9 | 19.9  |
| Net Profit Margin              | 10.6 | 12.6 | 11.9 | 12.6 | 14.7  |
| Return on Equity               | 16.4 | 16.8 | 15.8 | 16.3 | 17.4  |
| <b>Efficiency Ratio</b>        |      |      |      |      |       |
| Return on Assets (%)           | 8.6  | 9.1  | 8.4  | 8.4  | 9.3   |
| Asset Turnover (x)             | 0.8  | 0.8  | 0.7  | 0.7  | 0.6   |

Aggressive Expansion: BDMS is very aggressive on their expansion strategy. Not only in local market, but in AEC market as well. Number of hospital operate had been double over the last 4 years to 42 hospitals in 2015 with available patient bed of 6,000 beds. Their strategic plan is to operate 50 hospitals in 2019 with the capacity of 8,000 patient beds.

Large international customer base: International customer used to contribute 36% of BDMS revenue from 2007 – 2010. However, after an aggressive expansion on 2011, BDMS grew a significant amount in upcountry area, especially thru acquisition of hospital in upcountry. However, the hospitals in upcountry area are in big city/province such as Phuket, Pattaya, Huahin, where have a significant number of foreigner stay.

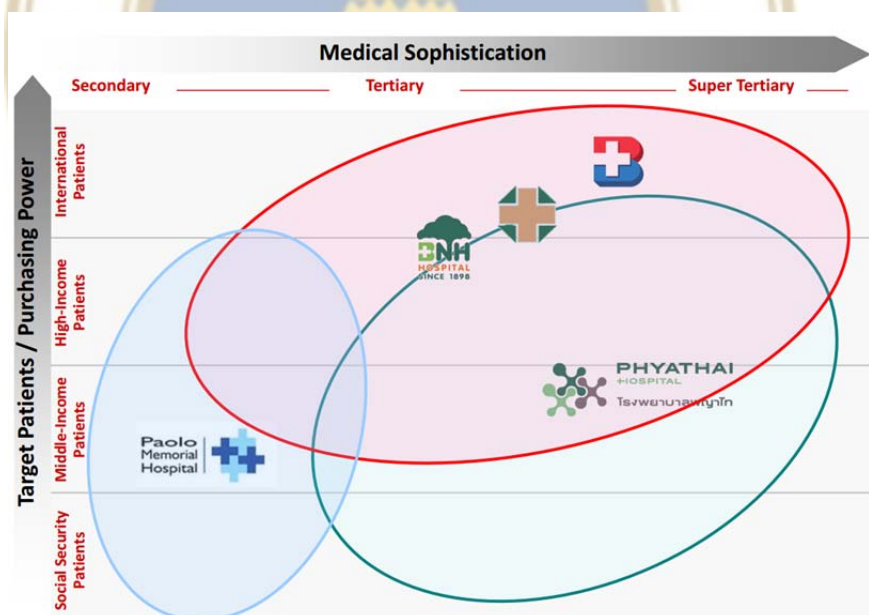
Innovation & Technology: BDMS also co-operate with many other hospital & health institution to gain better knowledge and new technology to help improve diagnostic accuracy. Thus, resulting in better treatment and patient's satisfaction. This can also reduce the average day of patient stay which yield a better bed turnover, increase number of case/operation.

Strong Price Performance against the Market: over the last 12 months, we have seen the market plunge more than 10%. Unlike the stock market, BDMS can yield a 3.7% return, which is nearly 15% higher than SET.



**Figure 1.1 BDMS Share Price with Business Expansion**

Diversification of Patient Mix: With 6 different hospital brands, BDMS can capture from middle to high income patients, both local and international patients. They also cover all level of medical sophistication, from normal medical treatment to super tertiary, such as open heart and brain surgery.



**Figure 1.2 BDMS brand positioning**

Source: BDMS annual report 2014



## **CHAPTER II**

### **BUSINESS DESCRIPTION**

Bangkok Dusit Medical Services Public Company Limited ( SET Symbol : BDMS ) is the largest private hospital operator in Thailand in terms of patient services revenue and market capitalization with approximately THB 94.0 billion in assets as of June 2015. It was opened in 1972 by a team of physicians, pharmacists and 30 nurses to administer the 100 bed-facility.

It focused on Bangkok and various high-growth markets in Thailand and oversea locations. The Company is committed to be the leading network healthcare provider by meeting the needs of Thai and foreign patients with high quality, internationally-accepted standards, and value for money services together with the state-of-the art medical technology.

The company currently has registered capital of Bt1.65m and paid-up capital of Bt1.55m. Moreover, the company has 40 hospitals in Thailand and 2 hospitals in Cambodia. The company operates under six hospital groups, namely, Bangkok Hospital, Samitivej Hospital, BNH Hospital, Phyathai Hospital, Paolo Memorial Hospital and Royal Hospital. The company's network also covers businesses that support medical care, such as medical laboratories, medicine production, and saline production.

**Bangkok Hospital :** The company owns 19 subsidiaries throughout Thailand with 2,936 beds to serve its patients. Bangkok hospitals offer specific medical services and full of outstanding facilities for the luxury value patients in terms of high advance medical technologies.

**Samitivej Hospital :** Samitivej hospital has been international-standard healthcare services by offering multi-lingual workforce and international services such as interpreters and immigration services to oversea patients. Currently, the hospital has 6 subsidiaries which are located in Sukhumvit, Srinakarin, Sriracha, Thonburi, Children's hospital and Chonburi.

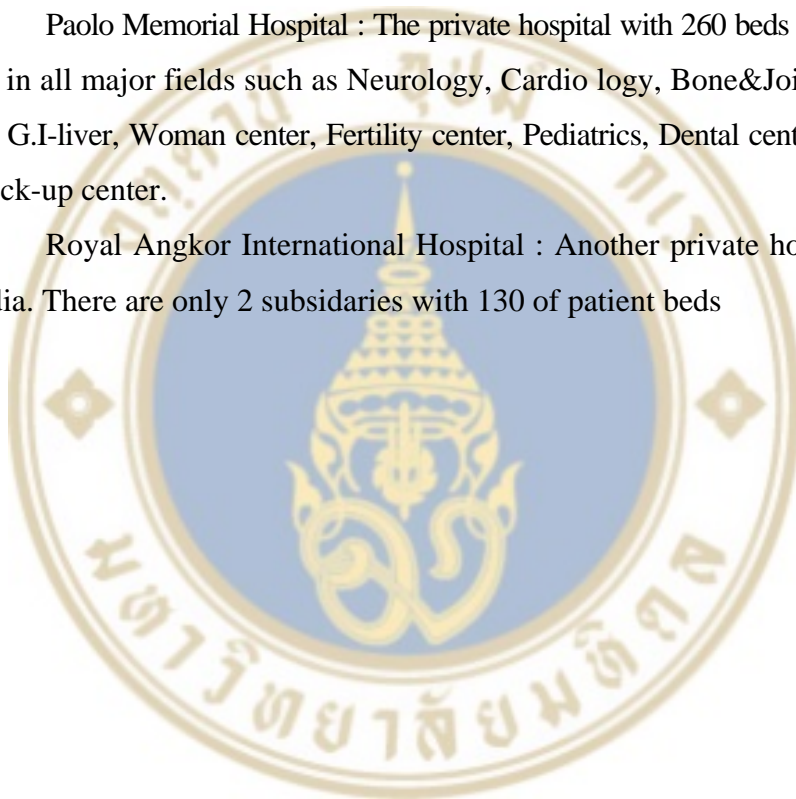


BNH Hospital : The hospital provides the highest quality medical service with specialists and general practitioner doctors completely involved with patients, from consultation and diagnosis, through to planning and executing treatment, following-up of results, and in surgical cases and post operative care with a concept of Family Doctor

Phyathai Hospital : The hospital has 1,340 patient beds' from 3 subsidiaries which are Phyathai 1,2 and 3. Each of them has a different expertise field. Phyathai 1 focuses on Esthetic Center and Mini spine center. Phyathai 2 experts in Dermatology and Woman clinic while Phyathai 3 accentuates on Pediatric and Child center.

Paolo Memorial Hospital : The private hospital with 260 beds offers exceptional services in all major fields such as Neurology, Cardiology, Bone&Joint, Spine center, Surgery, G.I-liver, Woman center, Fertility center, Pediatrics, Dental center, Rehabilitation and Check-up center.

Royal Angkor International Hospital : Another private hospital located in Cambodia. There are only 2 subsidiaries with 130 of patient beds

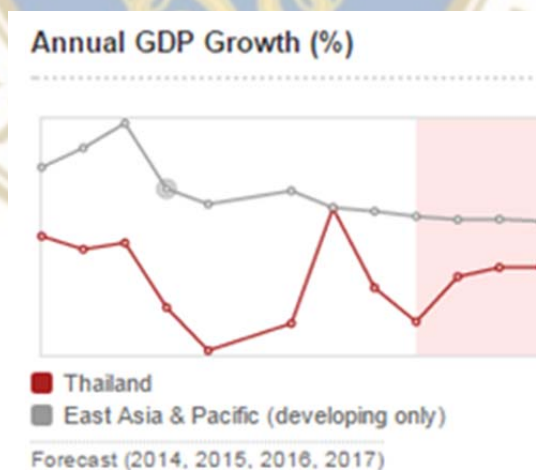


## CHAPTER III

### MACRO-ECONOMIC ANALYSIS

#### 3.1 Thailand Healthcare Industry Overview

According to the World Bank report, Thailand has spent 14.40 Billion Dollars which equal to 3.9% of Thailand GDP in 2006 to 2012 on health expenses. It can be concluded that this expense grew 12.2% in compounded annual growth rate that is faster than the real GDP which grew 3.9% in the same period. Furthermore, Bank of Thailand had projected that the revenue of healthcare industry will be increasing due to the middle-class population enlargement and medical tourism activities. However, comparing with other countries in South East Asia, Thailand still faces with a limitation in public healthcare services such as physician shortage, inadequate patient beds' and the lack of medical supplies. Therefore, private hospitals with premium quality services still have a chance to flourish in the sector.

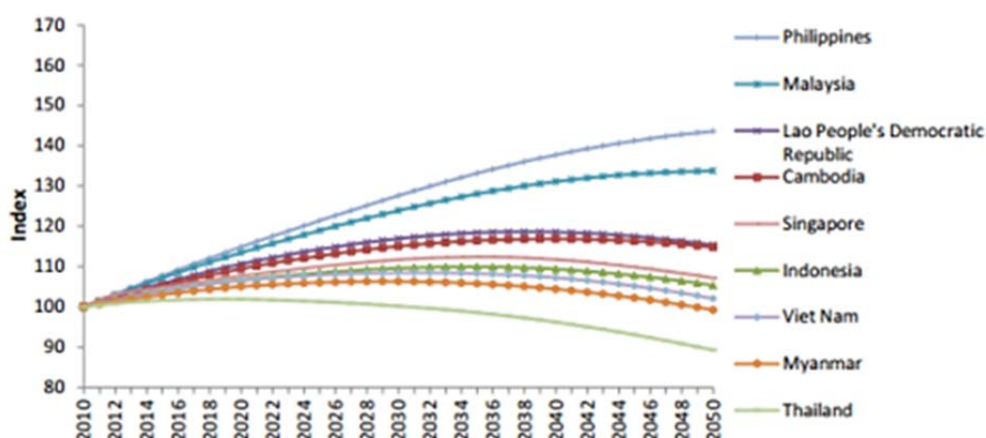


**Figure 3.1 Thailand annual GDP growth, historical and forecast**

**Source:** data.worldbank.org-Thailand GDP growth annual

### 3.2 The Population Trend, Which Supports The Business

United Nations World Population Prospectus forecasted that in 2020, Thailand population will rise to 68 Million with 12.3% of total population are older than 65 years. So the amount of senior citizen in Thailand will be ranked 2nd among South East Asia countries (1st is Singapore). Thus, the thriving on aging population and health care trend boost the health care demand up.



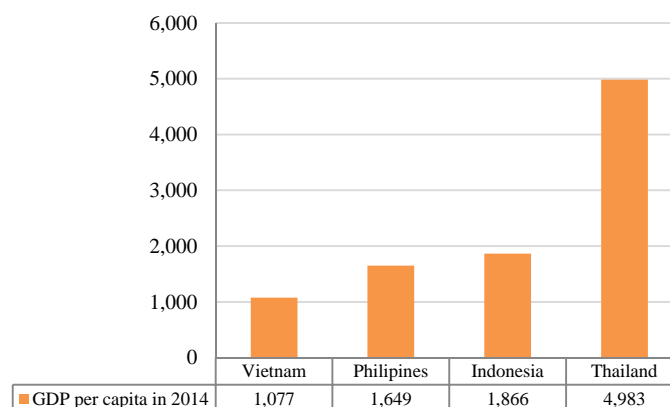
**Figure 3.2 Projected population growth 2010-2050**

**Source:** esa.un.org-Projected population growth 2010-2050

### 3.3 The Swelling Middle-Class Population

An emerging middle class continues to drive consumption growth. International Monetary Fund spotted that GDP per capita of Thailand in 2008 to 2014 had increased from 136,918 to 174,376 Million Baht which means it grew 5% in compounded annual growth rate. Apart from historical data, International Monetary Fund is also projected that GDP per capita of Thailand in 2015 to 2021 will be increasing from 174,376 to 242,523. In addition, the office of the national economic and social development board proposed that Gross province product (GPP) will be hiked in every region. To wrap up people tend to access to healthcare services more easily because the affordable price of services.

**GDP per capita in 2014 for reaching Middle class income**



**Figure 3.3 GDP per capita in 2014**

### **3.4 The Low Amount of Service Recipients In Healthcare Sector**

World health organization reported Thailand was ranked 5th in South East Asian country. Thailand population spent only 10.1% on GDP in 2012. Hence, there is an opportunity of business expansion in this country.

### **3.5 Medical Tourism Continues to Enjoy Vigorous Growth**

Ministry of Health reported Thailand received revenue from foreign patients around 121,658 Million Baht in 2012 which increases 24.3% in every year from 2008 to 2012. Thailand has compatible ability to operate treatment to patients with 86% of lower cost fee compared to The united states and 19.8% measured up to Singapore. In addition, Thailand owns more high-quality hospital than other country in South East Asia such as Singapore, India and Malaysia because additional furniture and equipment was provided to bring these hospitals up to the standard of Joint Commission International: JCI Accreditation.

### **3.6 Health Insurance Boosts the Demand for Health Care Services Up**

National Statistical Office of Thailand disclosed the number of people who purchase health insurance in Thailand had increased to 3.5 Million. This number equals to 2.1% of GDP in 2012 which is lower than other developed countries such as Australia (2.8%), England (2.8%), America (4.5%) and South Korea (5.3%). Thus, the numbers of health insurance tend to be increased in the future.

### **3.7 The Challenges Confronting Public Hospitals In Thailand Leads To the Higher Opportunity for Private Hospital**

Thailand public hospitals have the highest density of patient to hospital beds' ratio. There are 21 beds to serve 10,000 patients which are lower than Japan, America and England in 137, 29 and 29, respectively. Plus, the supply of physicians in the country has increased but it still not enough for the demand. The rate of clinical staff penetration of Thailand is lower other South East Asia countries compared to Singapore and Malaysia which have the number of clinical staff penetration approximately 87 and 89, respectively. Therefore, the largest private hospital still ranked 1st in terms of full service capacity.



## CHAPTER IV

### INDUSTRY ANALYSIS

#### 4.1 Well Macroeconomics: Rising In Domestic Healthcare Demand

According to the forecasted GDP growth rate and GDP per capita shows the remarkable improvement in 2020. It illustrates strong economic recovery after growing at a snail's pace rate in 2016 and further year. People tends to spend more on healthcare services. Domestic patient volume will be increasing by a strong five-year compound annual growth rate of 24% for OPD and 25% for IPD. In addition, the higher inflation rate would be another factor to rise revenue per head from medical fees up at least 4-6%

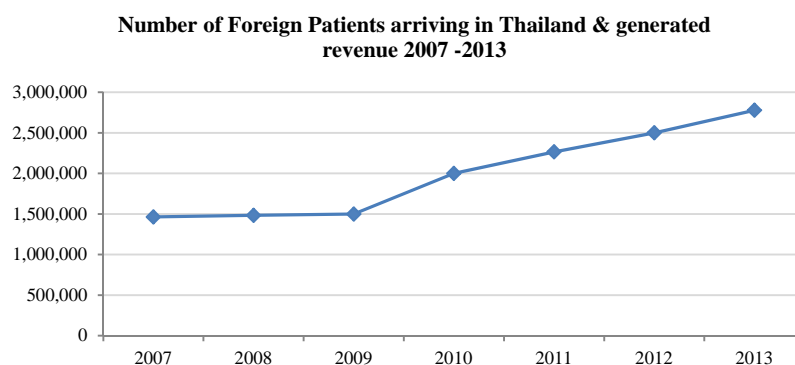
**Table 4.1 Economic forecast**

|                     | Actual    | Q4/15     | Q1/16     | Q2/16     | Q3/16     | 2020      |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| GDP growth rate     | 1%        | 0.3%      | 0.1%      | 0.2%      | 0.14%     | 1.77%     |
| GDP per capita      | 3,451     | 3,501     | 3,517     | 3,534     | 3,550     | 3,860     |
| Consumer spending   | 1,207,788 | 1,183,827 | 1,187,613 | 1,175,364 | 1,159,099 | 1,213,087 |
| Personal spending   | 0.51      | 2.10      | 0.10      | 3.09      | -0.09     | 1.20      |
| Government spending | 377,801   | 384,607   | 388,263   | 390,210   | 393,059   | 419,997   |
| Inflation rate      | -0.77%    | -0.5%     | 0.6%      | 0.3%      | 0.2%      | 2.61%     |
| Tourist arrivals    | 2,031,500 | 2,760,593 | 2,545,142 | 2,284,299 | 2,289,224 | 2,288,811 |
| Currency            | 35.74     | 36.55     | 36.90     | 37.26     | 37.62     | 32.25     |

#### 4.2 Tourism Booming Leads Thailand to Be A Hub Of Medical

In related statistics, the number of visitor arrivals to Thailand at Suvarnabhumi and Don Mueang International Airports reached 16,989,458 in 2014, representing a 16.65% increase over 2013. In December 2013, the number reached 1.59 million arrivals or 1.99% year-on-year increase.





**Figure 4.1 Number of Foreign Patients arriving in Thailand & generated revenue 2007 -2013**

As aforementioned, Thai medical care industry attracts almost 2 million foreign medical tourists annually. This number equals to 20% increase from 2007 to 2012. As a result, many visitors choose to undergo surgery in the country as part of their vacation stay which leads to the increasing in medical revenues flew into Thailand almost 2.5 times higher than 2007. With over 1,000 public and 400 private hospitals operating in compliance with international standards and fully equipped with internationally trained physicians, Thai medical service provides excellent health care at highly competitive prices.

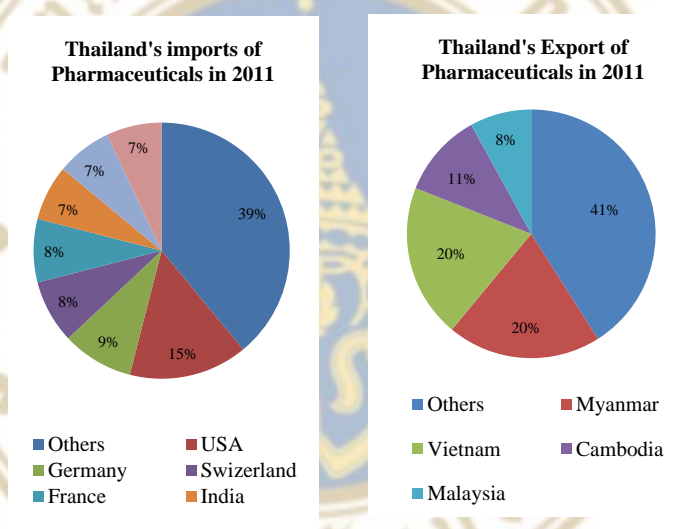
**Table 4.2 Average Patient spending**

| Procedure            | United States | Singapore | Thailand | India   |
|----------------------|---------------|-----------|----------|---------|
| Coronary Angioplasty | \$28,200      | \$13,400  | \$4,200  | \$5,700 |
| Heart Bypass         | \$123,000     | \$17,200  | \$15,000 | \$7,900 |
| Hip Replacement      | \$40,364      | \$12,000  | \$17,000 | \$7,200 |
| Gastric Bypass       | \$25,000      | \$13,700  | \$16,800 | \$7,000 |
| Hysterectomy         | \$15,400      | \$10,400  | \$3,650  | \$3,200 |
| Lasik (2eyes)        | \$4,000       | \$3,800   | \$2,310  | \$1,000 |
| Dental implant       | \$2,500       | \$2,700   | \$1,720  | \$900   |
| Breast Implant       | \$6,400       | \$8,400   | \$3,500  | \$3,000 |

**Source:** The board of investment of Thailand-Medical treatment prices in 4 countries

### 4.3 High Requirement in Medical Devices and Pharmaceutical Products

National Statistical Office estimated that Thailand's population would increase to 70 million by 2019. The change in population structure will increase demand for medical devices and healthcare products. Two-thirds of medical devices in Thailand are imported. The market for medical devices in 2011 was US\$869 million; a growth rate remains 9% from previous year. The market size of medical devices predicted to grow 40% in the next four years to US\$1.2 billion in 2016. For pharmaceutical products, Thailand's imports have grown steadily over the past six years while exports have stabilized over the past two years. As aforementioned there is a possibility to premise that healthcare industry will continue to grow in Thailand.



**Figure 4.2 Thailand's import & export of pharmaceutical products in 2011**

**Source:** National statistic of Thailand

## **CHAPTER V**

### **COMPETITION ANALYSIS**

#### **5.1 Competitive Positioning**

Even though Bangkok hospital charges more for their services than most other Thai hospitals, but it offers services that cannot be found elsewhere. Fortunately for a direct comparison, its costs are very similar across the board and the focus can be on their service and capabilities.

##### **5.1.1 Background and Location**

Bangkok hospital is a main network of Thai hospitals focused on Bangkok and sprawling into the provinces and even Cambodia, though the portion the network can be the most essence to foreigners to visit Bangkok Hospital. Bangkok hospital consists of its International Hospital as well as its main General Hospital and a collection of specialty hospitals, including their Heart Hospital, Rehabilitation Center and Dental Clinic. Bangkok hospital is located near, but not walking distance from, several Skytrain and subways stations, so a taxi is in order in this case as well. Bangkok hospital gets 150,000 overseas patients annually which usually require more serious treatments.

##### **5.1.2 Staff and Technical Capabilities**

Bangkok hospital has the level of skill in physicians and nurses. Because it not only processes a high proportions of foreign-trained doctors, especially those trained in the US and EU. Nursing staff are professional and abundant in both and interpreters are available in a large number of languages. Bangkok hospital goes a step beyond any other hospitals in Thailand by hiring a physician and nurse from their major patient nationalities (ie a Saudi doctor and nurse for Saudi patients) and having significant staff and facilities specially devoted to Japanese and Middle-Eastern patients, who represent a large proportion of their patient base and are generally very appreciative of services in their native language.

Unlike many other aspects of a hospital experience, the sheer technical capabilities of a hospital are somewhat easily quantified, and it is in this aspect that Bangkok Hospital most outshines its competitor. Bangkok hospital has focused a tremendous amount of resources to being on the cutting edge of medical technology, Bangkok hospital hi-tech drive falls into two general areas: advanced imaging and non-invasive surgery. The advanced imaging options include at least seven MRI scanners in their main hospital alone. Each department receives its own specialized diagnostic equipment, unlike many hospitals which must pool resources, including Digital Mammography and a brand new 128-slice CT scanner currently being installed. It is peerless in South-East Asia, and Bangkok hospital boasts one of Thailand's only two clinical PET-CT scanners. The non-invasive offerings include state-of-the-art radiation systems such as the Novalis device for brain tumors and robotic laparoscopic surgery for both heart and joint operations (with different robots, of course).

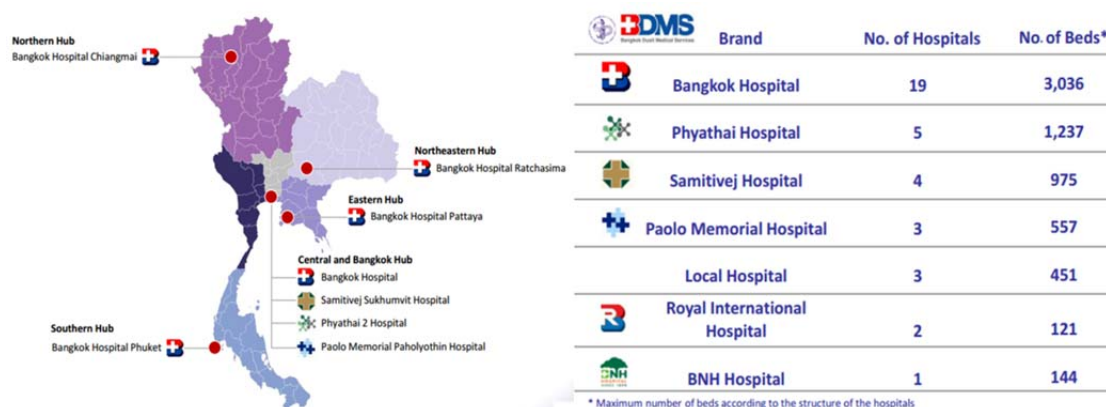
While other hospitals in Thailand simply does not compete in this field, which gives Bangkok hospital a decisive advantage in the specific operations these advanced machines enable; reducing risk, discomfort and hospital stay time.

## **5.2 Target Market and Marketing Strategies**

Bangkok hospital is a famous within Thailand and elsewhere in Asia and the Middle East. The hospital focuses on Middle-east and Asia customers which is difference from other hospitals that focuses on US and Europe customers. The hospital relies heavily on an integrated and ubiquitous IT system that shift patients from area to area and relays patient information, including test results, digitally between doctor and technician. Their systems are extraordinarily efficient by American standards. This also makes bill payment very simple and straightforward. Bangkok hospital has stepped ahead of other hospital in Thailand in terms of arrangements with insurers, both of the international and regional variety, which makes it easier to automatically claim insurance. While other hospitals still offer to help with paperwork which make connections are significantly more extensive and take more time than Bangkok hospital.

### 5.3 Market Share Analysis

Bangkok hospital is the largest private hospital in Thailand in terms of the market capitalization and revenue from its patients. It owns and manages 37 hospitals throughout the whole country with the total beds of 6,521 under 6 hospital brands.



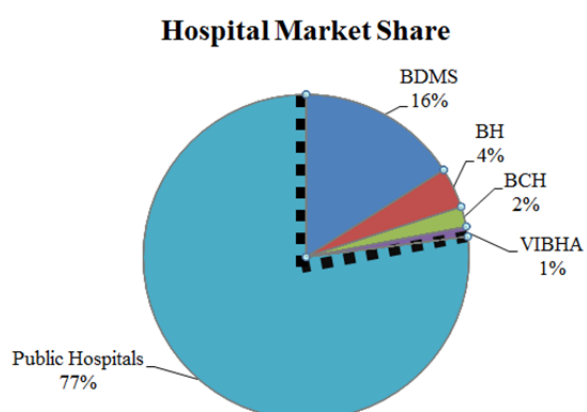
**Figure 5.1 Number of bed among top private hospital in Thailand**

**Source:** 2014 BDMS's annual report

Furthermore, in 2014; Bangkok hospital gains 63.2% of its revenue from the central hub in Bangkok which is approximately 36,007,925,646 Million baht. The main target revenue came from international patients who receive severe treatments from the hospital as well as middle and high-income patients in domestic and patients who receive benefit from their welfare, respectively. As a result, Bangkok hospital obtains 16% of market share in Thailand

Comparing to the rivals which are Bumrungrad hospital, Bangkok Chain hospital (Kasemrad hospital and subsidiaries) and Vibhavadi hoapital. Bangkok hospital is ranked the highest market share among private hospital sector, followed by Bumrungrad hospital, Bangkok chain hospital and Vibhavadi hospital, at 16%, 4%, 2% and 1%, respectively.





**Figure 5.2 Market share of hospital in 2014**

**Source:** National statistic of Thailand





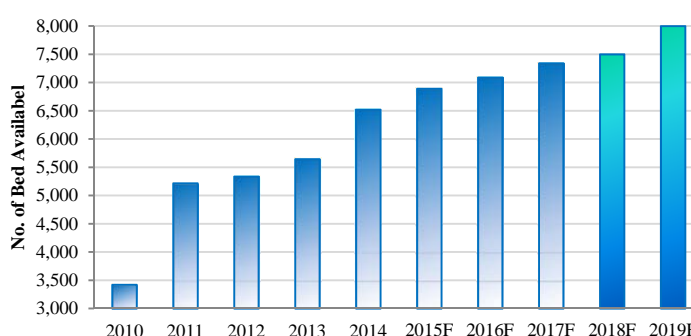
## CHAPTER VI

### INVESTMENT SUMMARY

In summary, we recommend buying BDMS stock as it is a market leader in Healthcare services in Thailand. With the target price of 24.10THB, it presents an upside of 21.7% from current price of 19.80THB (as of December, 2015). This target price is calculated from Forward multiple method which we project the financial statement over next 5 years and compare with other similar firm in the same industry. We provide more detail in the next chapter. There are several factors that also support this company stock as well.

#### 6.1 Aggressive Expansion

As a biggest hospital chain in Thailand, BDMS has set a very aggressive expansion plan thru 2019. Their target is to have 50 hospitals operate through all regions, with target available bed of 8,000 beds in total. As of now, BDMS has an investment in 4 new hospitals which will boost the number to 46 hospitals in 2017.



**Figure 6.1 BDMS's expansion plan**

## **6.2 Big market for growing**

Thailand has a very high population to bed ratio, that is 476 people per bed, rank 3rd in Asean. Especially in North-East region of Thailand, where population per bed is the highest, together with highest utilization rate. BDMS does not have many hospital in that region so it presents a big market for BDMS to grow.

## **6.3 Excellent Center**

BDMS will continue their investment, not only in number of hospital, they also plan to invest heavily in specialty clinic center to improve service quality. BDMS will focus on Heart, Brain and Cancer clinic with support from MD Anderson Institution. There is an upward trend in number of patient in these 3 cases which generate relatively high revenue and margin.

## **6.4 Strategic Marketing in both local and international**

BDMS will increase spending on marketing to gain better brand awareness to both local and international target patient. This will also include a direct strategic marketing with partner overseas to bring in more international patient and medical tourists.

## **CHAPTER VII**

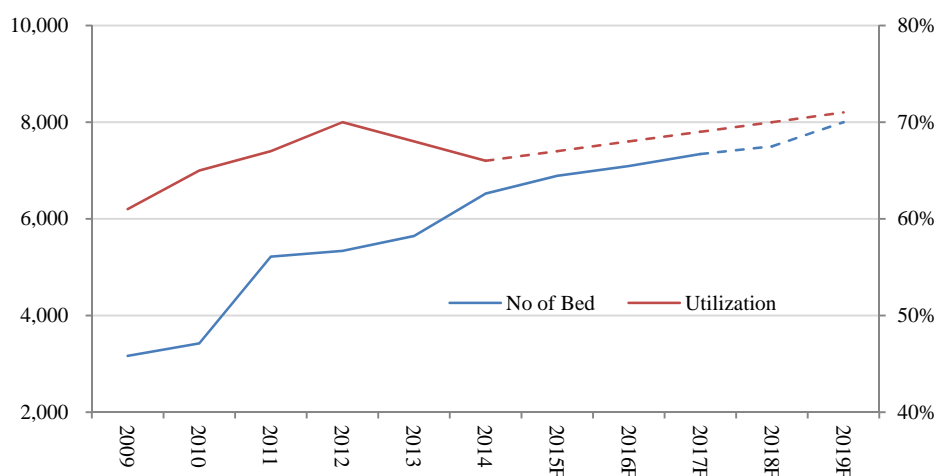
### **DISCOUNTED CASH FLOW VALUATION**

To find the reasonable stock value for BDMS, we applied Discounted cash flow (DCF) to the calculation. We prepared a financial projection over the next 5 years to get estimate cash flows then discounted these cash flows back the present value.

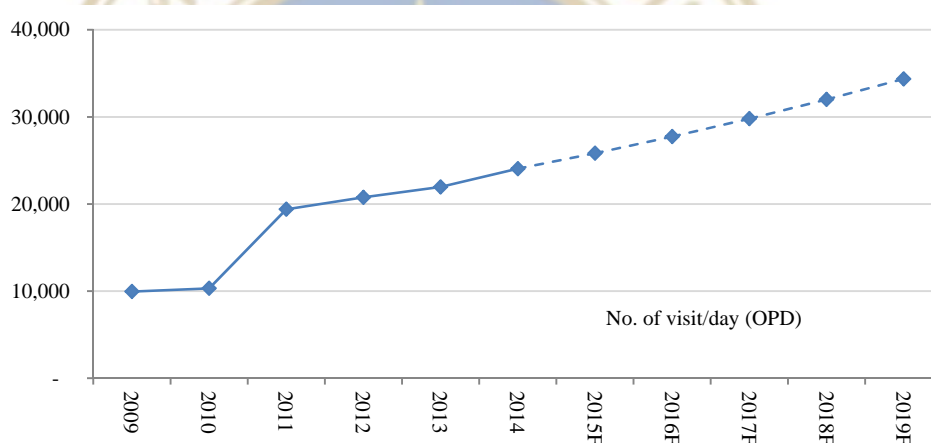
#### **7.1 Assumptions**

##### **7.1.1 Sales growth**

Sales growth is calculated by using total number of bed, bed utilization rate, number of visit (OPD) and average revenue per case/bed (IPD). We project a 11.8% CAGR for the high growth period from 2015-2019 which consist of 7.4% growth in OPD visit per day. IPD is estimated from increase in number of bed from new hospital, together with 1% nominal increase in bed utilization rate. BDMS gave an estimate medical fee increase of 4-6% annually so we expect the revenue per case to increase by 5% per year.

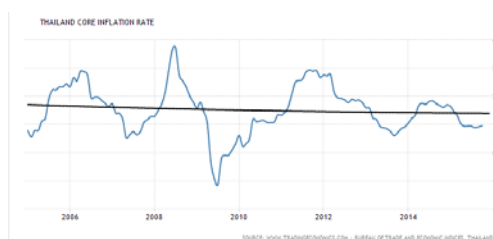


**Figure 7.1 BDMS's projected number of bed**

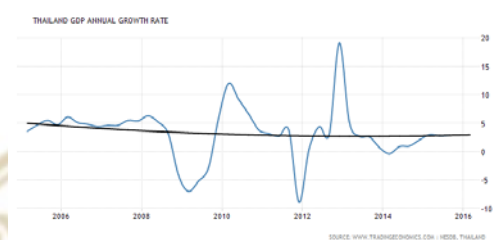


**Figure 7.2 BDMS's projected number of patient visit per day**

For Terminal growth, IMF has estimate the GDP for Thailand at 5.7% CAGR. We do not feel this is a comfortable number. So we look over the trend then weight estimate GDP growth from 3 sources, IMF, World Bank and Band of Thailand which estimate the GDP growth of Thailand at 5.7%, 4.6% and 3.7% respectively, and get the average of 4.7% as our terminal growth which in-line with estimate medical fee increase of 4-6% (data from BDMS).



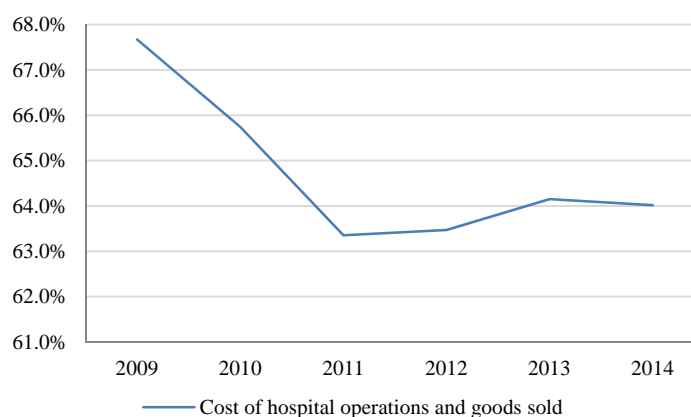
**Figure 7.3 Thailand core inflation rate**



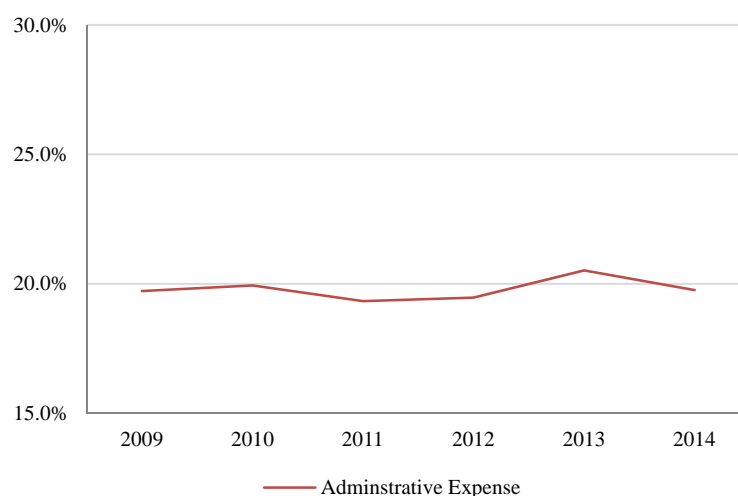
**Figure 7.4 Thailand GDP annual growth rate**

### 7.1.2 Cost of Hospital Operation & Administrative Expense

We have seen the cost of hospital operation is gradually getting lower. This is driven by the synergy effect from M&A. We expect that this portion will get lower as the bed utilization rate will be increased. There are eight hospitals open up in 2014. The utilization rate of newly operate hospital is relatively low, 40%-50%. After first few year operations, utilization rate will climb up and help lower the average fixed cost. Administrative Expense stays very stable at 20% so we hold this expense/sales ratio stable over the next 5 years.



**Figure 7.5 Cost of hospital operations and goods sold**



**Figure 7.6 Administrative expense**

### 7.1.3 Weighted Average Cost of Capital

We have seen the effective financial rate of 5% over the last 3 years. As BDMS plan to keep their D/E ratio unchanged and not higher than 1.0x, we can expect the effective financial cost to stay at 5% level. This implies the target weight of 40:60 for debt & equity. With effective tax rate of 20%, Cost of Debt is 4%. 10-years government bond yield is 2.79%, we take this figure as our risk-free rate. Market risk premium is 7.4% for Thailand. BDMS Beta is 0.65, 5 years monthly.

## 7.2 Projected Cash Flow

United Nations World Population Prospectus forecasted that in 2020, Thailand population will rise to 68 Million with 12.3% of total population are older than 65 years. So the amount of senior citizen in Thailand will be ranked 2nd among South East Asia countries (1st is Singapore). Thus, the thriving on aging population and health care trend boost the health care demand up.



**Table 7.1 BDMS projected cash flow calculation**

| Income Statement   | Y2014           | Y2015E          | Y2016E          | Y2017E          | Y2018E          | Y2019E          |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>Revenue</b>   |                 |                 |                 |                 |                 |                 |
| Revenue from Hospital Operation                            | 54,341 M        | 61,242 M        | 68,017 M        | 75,793 M        | 83,870 M        | 94,947 M        |
| Revenue from Sales of Foods & Goods                        | 1,712 M         | 1,883 M         | 2,072 M         | 2,279 M         | 2,507 M         | 2,758 M         |
| Interest Income & Gain from ST Investment                  | 77 M            | -               | -               | -               | -               | -               |
| Dividend Income  | 215 M           | -               | -               | -               | -               | -               |
| Other  | 629 M           | -               | -               | -               | -               | -               |
| <b>Total Revenue</b>                                       | <b>56,975 M</b> | <b>63,125 M</b> | <b>70,089 M</b> | <b>78,072 M</b> | <b>86,377 M</b> | <b>97,705 M</b> |
| Cost of hospital operations and goods sold                 | 36,473 M        | 39,138 M        | 43,455 M        | 48,405 M        | 53,554 M        | 60,577 M        |
| Administrative Expense                                     | 11,257 M        | 12,436 M        | 13,808 M        | 15,380 M        | 17,016 M        | 19,248 M        |
| <b>Total Expense</b>                                       | <b>47,730 M</b> | <b>51,573 M</b> | <b>57,263 M</b> | <b>63,785 M</b> | <b>70,570 M</b> | <b>79,825 M</b> |
| <b>Profit Before Share of Income, Interest &amp; Taxes</b> | <b>9,245 M</b>  | <b>11,552 M</b> | <b>12,826 M</b> | <b>14,287 M</b> | <b>15,807 M</b> | <b>17,880 M</b> |
| Share of income from investments in associated company     | 1,068 M         | 1,010 M         | 1,121 M         | 1,249 M         | 1,382 M         | 1,563 M         |
| <b>EBIT</b>  | <b>10,312 M</b> | <b>12,562 M</b> | <b>13,948 M</b> | <b>15,536 M</b> | <b>17,189 M</b> | <b>19,443 M</b> |
| Finance Expenses   | -972 M          | -1,345 M        | -1,342 M        | -1,284 M        | -1,236 M        | -1,216 M        |
| <b>EBT</b>   | <b>9,340 M</b>  | <b>11,217 M</b> | <b>12,605 M</b> | <b>14,252 M</b> | <b>15,953 M</b> | <b>18,227 M</b> |
| Tax Expenses   | -1,671 M        | -2,243 M        | -2,521 M        | -2,850 M        | -3,191 M        | -3,645 M        |
| <b>Net Income</b>  | <b>7,669 M</b>  | <b>8,974 M</b>  | <b>10,084 M</b> | <b>11,402 M</b> | <b>12,763 M</b> | <b>14,582 M</b> |
| Profit to Equity   | 7,394 M         | 8,651 M         | 9,722 M         | 10,992 M        | 12,304 M        | 14,058 M        |
| Profit to Non-controlling interests of subs                | 276 M           | 322 M           | 362 M           | 410 M           | 459 M           | 524 M           |
| Average number of share                                    | 15,491 M        | 15,491 M        | 15,491 M        | 15,491 M        | 15,491 M        | 15,491 M        |
| <b>EPS</b>   | <b>0.48</b>     | <b>0.56</b>     | <b>0.63</b>     | <b>0.71</b>     | <b>0.79</b>     | <b>0.91</b>     |

**Table 7.2 Discounted Cash flow method calculation**

| Free Cash Flow          | 2015F            | 2016F           | 2017F           | 2018F           | 2019F            |
|-------------------------|------------------|-----------------|-----------------|-----------------|------------------|
| <b>Revenue</b>          | <b>63,125 M</b>  | <b>70,089 M</b> | <b>78,072 M</b> | <b>86,377 M</b> | <b>97,705 M</b>  |
| COGS                    | -39,138 M        | -43,455 M       | -48,405 M       | -53,554 M       | -60,577 M        |
| SG&A                    | -12,436 M        | -13,808 M       | -15,380 M       | -17,016 M       | -19,248 M        |
| <b>Operating Profit</b> | <b>11,552 M</b>  | <b>12,826 M</b> | <b>14,287 M</b> | <b>15,807 M</b> | <b>17,880 M</b>  |
| - Tax                   | -2,243 M         | -2,521 M        | -2,850 M        | -3,191 M        | -3,645 M         |
| NOPAT                   | 9,308 M          | 10,305 M        | 11,437 M        | 12,616 M        | 14,235 M         |
| + Depreciation          | 4,236 M          | 4,460 M         | 4,740 M         | 5,083 M         | 5,487 M          |
| +/- change in WC        | 268 M            | 338 M           | 388 M           | 403 M           | 550 M            |
| - CapEx                 | -6,730 M         | -7,563 M        | -8,551 M        | -9,572 M        | -10,936 M        |
| <b>FCFF</b>             | <b>6,546 M</b>   | <b>6,864 M</b>  | <b>7,237 M</b>  | <b>7,723 M</b>  | <b>8,235 M</b>   |
| Terminal Value          |                  |                 |                 |                 | <b>590,518 M</b> |
| <b>EV</b>               | <b>468,448 M</b> |                 |                 |                 |                  |
| - Debt                  | 44,274 M         |                 |                 |                 |                  |
| + Non-Operating Asset   | 1,878 M          |                 |                 |                 |                  |
| <b>Net Equity Value</b> | <b>426,052 M</b> |                 |                 |                 |                  |
| No. of Share            | 15,491 M         |                 |                 |                 |                  |
| <b>Share Price</b>      | <b>27.50THB</b>  |                 |                 |                 |                  |

With the above assumption, we get the target BDMS's share price of 27.50 THB, which mean an upside of 38.9% over current share price of 19.80 THB.



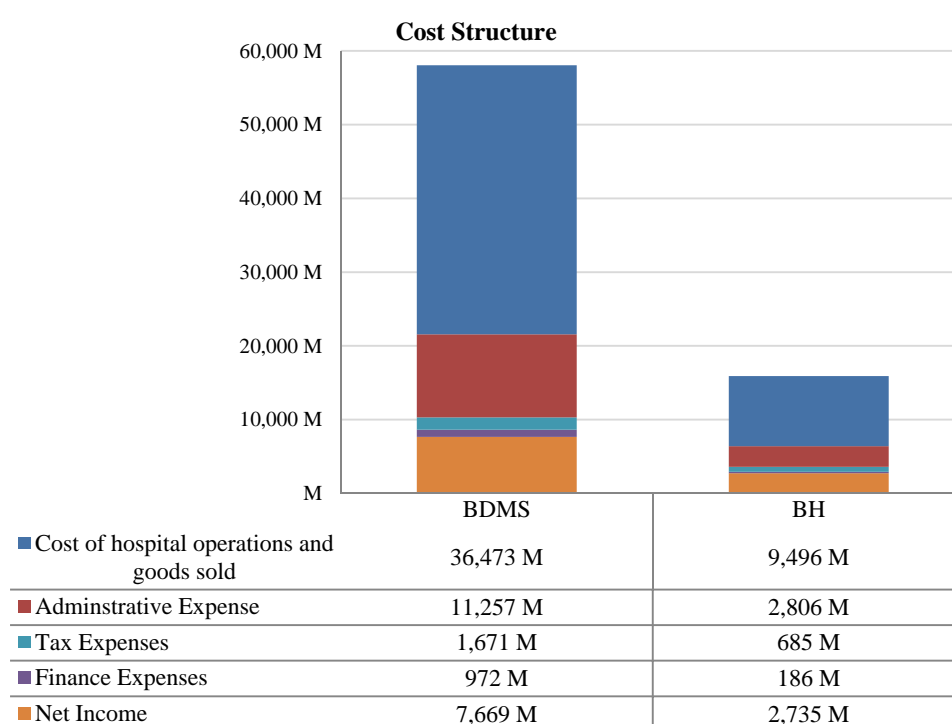
## CHAPTER VIII

### FINANCIAL STATEMENT ANALYSIS

#### 8.1 Summary Figures From Financial Statement

##### 8.1.1 Income Statement

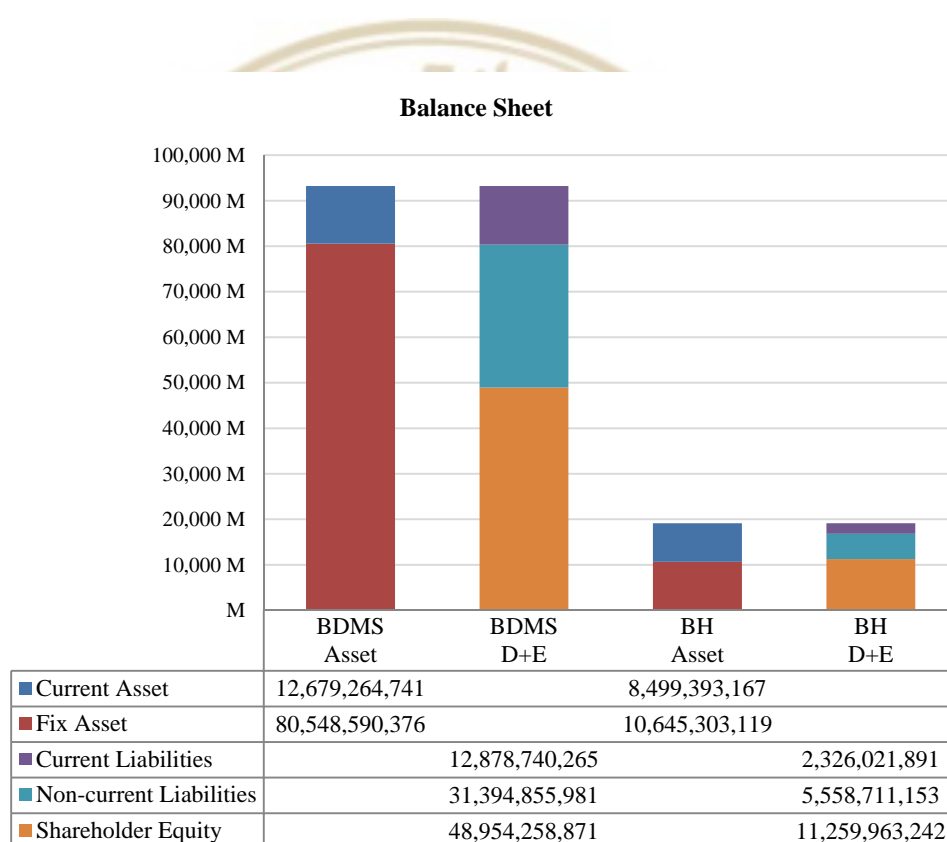
BDMS's revenue for 2014 is 54,341 million Baht, growth 10.52% YoY. It is 3.6x of BH's revenue. However, BDMS's operating expense is 47,730 million Baht, 3.9x of BH's expenses because of lower utilization rate, which lead to higher average fixed cost, result in operation margin of 9,245 million Baht. Which is 2.9x greater than BH.



**Figure 8.1 Cost structure comparison between BDMS & BH**

### 8.1.2 Balance Sheet

BDMS is relatively big, in term of size when compare with BH. BDMS is nearly 5 times bigger than BH. BDMS also has a considerable large size of fixed asset as they operate 46 hospitals nationwide, while BH operate only 1 hospital. But surprisingly, BDMS's total asset is 93.2 billion Baht against 19.1 billion Baht of BH but current asset is not so different 12.7 vs 8.5 billion Baht for BDMS and BH respectively. When we take number of hospital into account, we can say that BDMS's performance is significantly better in term of current asset management.

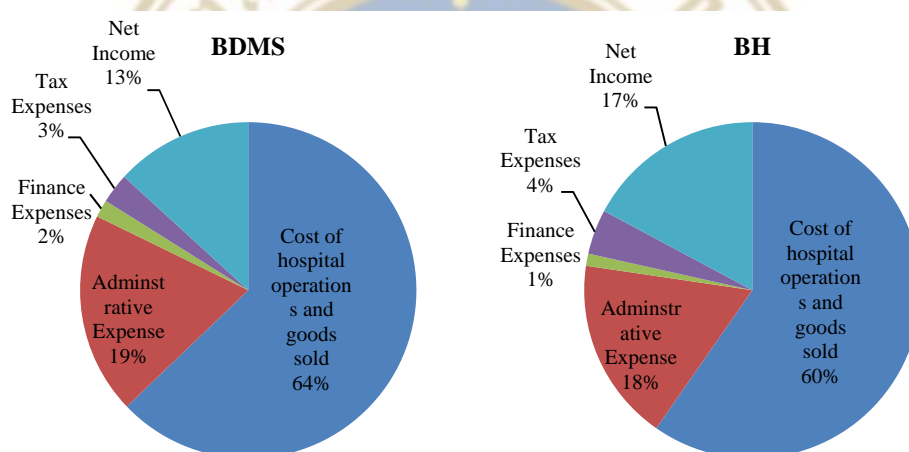


**Figure 8.2 Balance sheet comparison between BDMS & BH**

## 8.2 Common Size Analysis

### 8.2.1 Income Statement

Hospital operation contribute 95.4% to total BDMS's revenue and 3% from sales of foods & goods, while BH are 97.9% and 0.4% respectively. When we compare cost structure (income statement), we have seen that both firms have a very similar cost structure, 64% vs 60% COGS/Sales. This is due to the fact that BDMS operate more hospitals, in which one-fourth of them are newly operate and not utilized only 40%-50% on first few years. We expect to see an improvement over next few years as utilization rate is picking up and drive average fix cost down.



**Figure 8.3 Revenue structure comparison between BDMS & BH, in percentage**

Administrative expenses are 19.8% for BDMS and 17.6% for BH. Again this is the result from higher number of operate hospital. Financial Expense, as BDMS expand their business aggressively, especially on land to build new hospital in some project. This requires a large amount on capital expenditure, thus, higher debt and expenses. However, BDMS can manage it tax right and exercise all theirs right to get tax exempt in some project. Resulting in effective tax rate of only 17.9% of EBT, while BH pay tax at full rate 20%. Profit margin,



**Table 8.1 Income statement comparison between BDMS and BH**

| Revenue  | BDMS                  |               | BH                    |               |
|--|-----------------------|---------------|-----------------------|---------------|
| Revenue from Hospital Operation                            | 54,341,350,192        | 95.4%         | 15,571,471,756        | 97.9%         |
| Revenue from Sales of Foods & Goods                        | 1,712,248,291         | 3.0%          | 58,219,905            | 0.4%          |
| Interest Income & Gain from ST Investment                  | 77,200,806            | 0.1%          | 137,784,814           | 0.9%          |
| Dividend Income  | 214,523,164           | 0.4%          |                       |               |
| Gain on fair value adjustment                              | -                     | 0.0%          | 46,283,786            | 0.3%          |
| Other  | 629,243,443           | 1.1%          | 96,777,206            | 0.6%          |
| <b>Total Revenue</b>                                       | <b>56,974,565,896</b> | <b>100.0%</b> | <b>15,910,537,467</b> | <b>100.0%</b> |
| Cost of hospital operations and goods sold                 | 36,472,643,489        | 64.0%         | 9,495,601,614         | 59.7%         |
| Administrative Expense                                     | 11,257,252,160        | 19.8%         | 2,805,907,929         | 17.6%         |
| <b>Total Expense</b>                                       | <b>47,729,895,649</b> | <b>83.8%</b>  | <b>12,301,509,543</b> | <b>77.3%</b>  |
| <b>Profit Before Share of Income, Interest &amp; Taxes</b> | <b>9,244,670,247</b>  | <b>16.2%</b>  | <b>3,609,027,924</b>  | <b>22.7%</b>  |
| Share of income from investments in associated company     | 1,067,570,476         | 1.9%          | (2,745,213)           | 0.0%          |
| <b>EBIT</b>  | <b>10,312,240,723</b> | <b>18.1%</b>  | <b>3,606,282,711</b>  | <b>22.7%</b>  |
| Finance Expenses   | (972,232,771)         | -1.7%         | (186,032,536)         | -1.2%         |
| <b>EBT</b>   | <b>9,340,007,952</b>  | <b>16.4%</b>  | <b>3,420,250,175</b>  | <b>21.5%</b>  |
| Tax Expenses   | (1,670,926,369)       | -17.9%        | (685,420,058)         | -20.0%        |
| <b>Net Income</b>  | <b>7,669,081,583</b>  | <b>13.5%</b>  | <b>2,734,830,117</b>  | <b>17.2%</b>  |

### 8.2.2 Balance Sheet

From overview, we have seen that BDMS held relatively less idle cash & short-term investment, only 3.9% and 2% of total asset, compare with 24.5% and 10.1% of BH. BDMS also has better management on receivable as they have only 6.2%, compare with 8% of BH. For non current asset, both BDMS and BH hold a similar portion of PP&E, around 50% of total asset. But BDMS's non current asset is relatively bigger, 86.4% vs 55.5%, because BDMS invest in many other associated company 16.3% of total asset. Goodwill is also significantly high from acquisition of other hospital at premium, 17.2%

For liabilities side, both firm have same amount of trade payable at 10%. For sort of fund, BDMS rely on both from financial institution borrowing and issuing of its corporate bond/debenture. But BG relies mainly on debenture. Debt/Equity ratio of BDMS is slightly higher than BH, 0.91 vs 0.70.

**Table 8.2 Balance sheet comparison between BDMS and BH**

| Asset   | BDMS            |              | BH              |              |
|---|-----------------|--------------|-----------------|--------------|
| Current Asset                                 |                 |              |                 |              |
| Cash and cash equivalents                     | 3,594 M         | 3.9%         | 4,676 M         | 24.5%        |
| Short-term investments                        | 1,878 M         | 2.0%         | 1,922 M         | 10.1%        |
| Trade and other receivables                   | 5,819 M         | 6.2%         | 1,525 M         | 8.0%         |
| Inventories                                   | 1,111 M         | 1.2%         | 292 M           | 1.5%         |
| Other current assets                          | 278 M           | 0.3%         | 85 M            | 0.4%         |
| <b>Total current assets</b>                   | <b>12,679 M</b> | <b>13.6%</b> | <b>8,499 M</b>  | <b>44.5%</b> |
| Non Current Asset                             |                 |              |                 |              |
| Long-term deposit at financial institution    | 30 M            | 0.0%         | 2 M             | 0.0%         |
| Investments in associated companies           | 15,232 M        | 16.3%        | 233 M           | 1.2%         |
| Property, premises and equipment              | 47,065 M        | 50.5%        | 9,948 M         | 52.0%        |
| Goodwill                                      | 16,000 M        | 17.2%        | 112 M           | 0.6%         |
| Intangible assets                             | 861 M           | 0.9%         | 146 M           | 0.8%         |
| Other non-current assets                      | 1,361 M         | 1.5%         | 179 M           | 0.9%         |
| <b>Total non-current assets</b>               | <b>80,549 M</b> | <b>86.4%</b> | <b>10,620 M</b> | <b>55.5%</b> |
| <b>Total assets</b>                           | <b>93,228 M</b> |              | <b>19,120 M</b> |              |
| <b>Liabilities and shareholders' equity</b>   |                 |              |                 |              |
| Current liabilities                           |                 |              |                 |              |
| Trade and other payables                      | 4,408 M         | 10.0%        | 860 M           | 10.9%        |
| Bank overdrafts and short-term loans          | 111 M           | 0.2%         |                 |              |
| Current portion of long-term loans, debenture | 4,122 M         | 9.3%         |                 |              |
| Other account payable                         |                 |              | 1,029 M         | 13.1%        |
| Income tax payable                            | 632 M           | 1.4%         | 370 M           | 4.7%         |
| Accrued expenses                              | 2,794 M         | 6.3%         |                 |              |
| Other current liabilities                     | 813 M           | 1.8%         | 67 M            | 0.8%         |
| <b>Total current liabilities</b>              | <b>12,879 M</b> | <b>29.1%</b> | <b>2,326 M</b>  | <b>29.5%</b> |

**Table 8.2 Balance sheet comparison between BDMS and BH (cont.)**

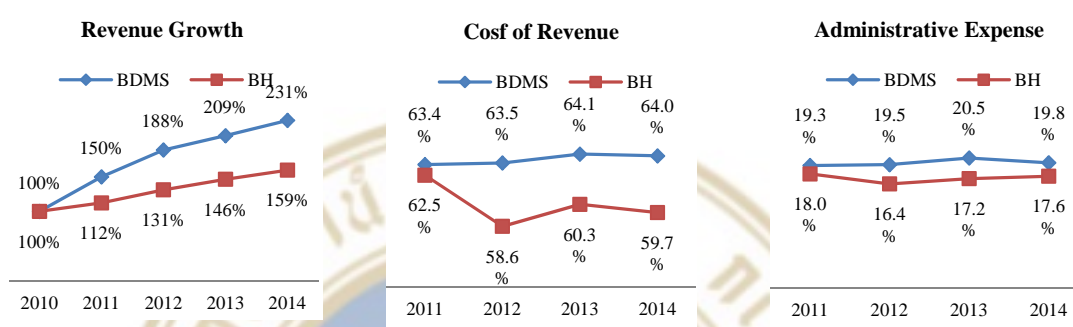
| Asset  | BDMS            |              | BH              |              |
|--|-----------------|--------------|-----------------|--------------|
| Non current liabilities  |                 |              |                 |              |
| Long-term loans from financial institutions - net of current portion | 9,443 M         | 21.3%        | 176 M           | 2.2%         |
| Debentures - net of current portion                                  | 17,938 M        | 40.5%        | 4,972 M         | 63.1%        |
| Provision for long-term employee benefits                            | 1,355 M         | 3.1%         | 410 M           | 5.2%         |
| Long-term portion of deferred income - membership                    | 667 M           | 1.5%         |                 |              |
| Other non-current liabilities  | 1,992 M         | 4.5%         |                 |              |
| <b>Total non-current liabilities</b>                                 | <b>31,395 M</b> | <b>70.9%</b> | <b>5,559 M</b>  | <b>70.5%</b> |
| <b>Total liabilities</b>   | <b>44,274 M</b> | <b>47.5%</b> | <b>7,885 M</b>  | <b>41.2%</b> |
| Common share+Premium   | 22,336 M        | 45.6%        | 1,566 M         | 13.9%        |
| Retained earnings  | 23,229 M        | 47.5%        | 9,084 M         | 80.7%        |
| Other components of shareholders' equity                             | 1,215 M         | 2.5%         | 233 M           | 2.1%         |
| <b>Equity attributable to owners of the Company</b>                  | <b>46,780 M</b> |              | <b>10,883 M</b> |              |
| Non - controlling interests of the subsidiaries                      | 2,174 M         | 4.4%         | 377 M           | 3.3%         |
| <b>Total shareholders' equity</b>                                    | <b>48,954 M</b> | <b>52.5%</b> | <b>11,260 M</b> | <b>58.8%</b> |
| <b>Total liabilities and shareholders' equity</b>                    | <b>93,228 M</b> |              | <b>19,145 M</b> |              |

## 8.3 Trend Analysis

### 8.3.1 Sales growth: Sales Growth

From 2011-2014, we use 2010 as a base year to see how both firm revenue growth over last 5 years. BDMS had achieved a dramatic growth of 231% to 54,341 million Baht, equal to 18.2% CAGR. BH growth is 9.8% CAGR. BDMS growth is mainly driven aggressive expansion and acquisition of new hospitals. We have seen a gradually increase in all 3 margins. But there was a big drop in 2013 due to the fact that BDMS expand & start many new hospital operations. It is normal for Hospital business to start with negative profit for the first couple years of operation. As we can see from the table below that 7 of 10 hospitals that opened in 2013-2014 generate negative net profit, especially greenfield project. However, brownfield project usually generate profit from the start if BDMS decide to continue the operation with minimal change. However, acquisition of other hospital can also get negative profit. For example,

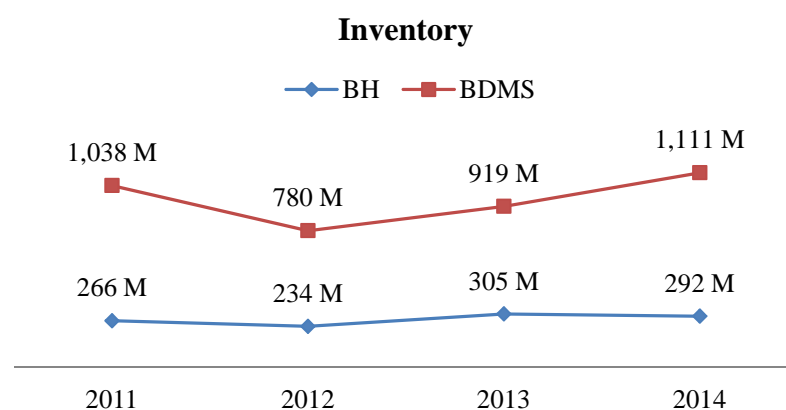
after acquired, BDMS might need to invest substantial amount of invest to renovate and install new medical device & facilities to match with BDMS standard. We foresee that operating margin will likely stay at this level over next 3-4 years but will rise sharply and get break 20% operating margin in 2019-2020 because of higher utilization, lower COGS from synergy and lower depreciation expenses.



**Figure 8.4 Historical revenue growth, cost and administrative expense**

### 8.3.2 Inventory

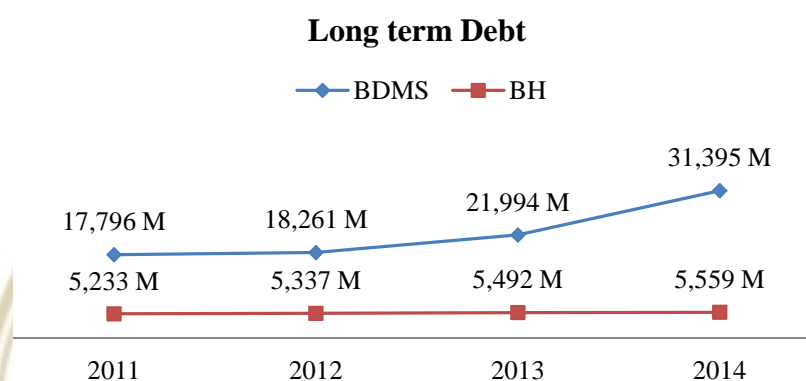
BDMS has a rise in inventories level over last few year, 19.34% CAGR. This is the result of new hospital which requires stocking up the inventories. However, if we compare inventories with number of hospital, we will find that BDMS operate much more efficient (46 hospitals vs 1 hospital).



**Figure 8.5 Historical inventory level, comparison between BDMS & BH**

### 8.3.3 Debt level

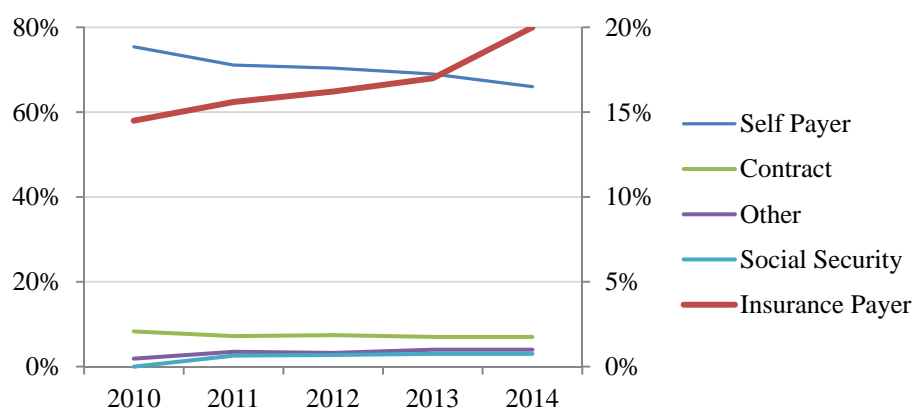
Because of its aggressive expansion, BDMS's source of fund rely heavily on external financing, mainly from issuing of debenture. Over the last 4 years, long term debt is nearly double, jump from 17.8 billion to 31.4 billion Baht. However, management still manage it at lower than 1.0 D/E ratio which is still in acceptable range from investor's point of view.



**Figure 8.6 Long-term debt, comparison between BDMS & BH**

### 8.3.4 DSO / DIO / DPO = Required Working Capital

Insurance payer increase significantly over past 5 years. In 2014, revenue from insurance payer jumped 17.6% YoY and caused Account Receivable to increase 18.2% YoY



**Figure 8.7 Historical customer mix**



Inventories is also driven up from increase in number of hospital as each hospital has to store the basic medicine & other related item to support hotel operation. BDMS had done a good job counter act the lengthen DSO by extend DPO further.

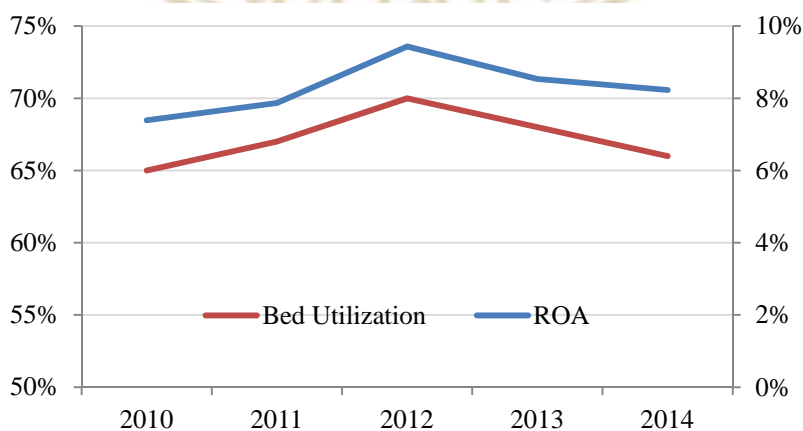
**Table 8.3 DSO/DIO/DPO/CCC trend**

|            | 2010       | 2011        | 2012        | 2013        | 2014       |
|------------|------------|-------------|-------------|-------------|------------|
| <b>DSO</b> | 29.1       | 34.0        | 34.4        | 35.5        | 37.9       |
| <b>DIO</b> | 10.6       | 18.1        | 10.8        | 11.3        | 12.4       |
| <b>DPO</b> | 35.1       | 59.0        | 50.2        | 49.4        | 49.1       |
| <b>CCC</b> | <b>4.6</b> | <b>-6.9</b> | <b>-4.9</b> | <b>-2.6</b> | <b>1.2</b> |

In over all, BDMS used to archive the negative CCC of 6.9 days in 2011 but having CCC of 1.2 days is still in an acceptable range.

### 8.3.5 Bed utilization & Profitability

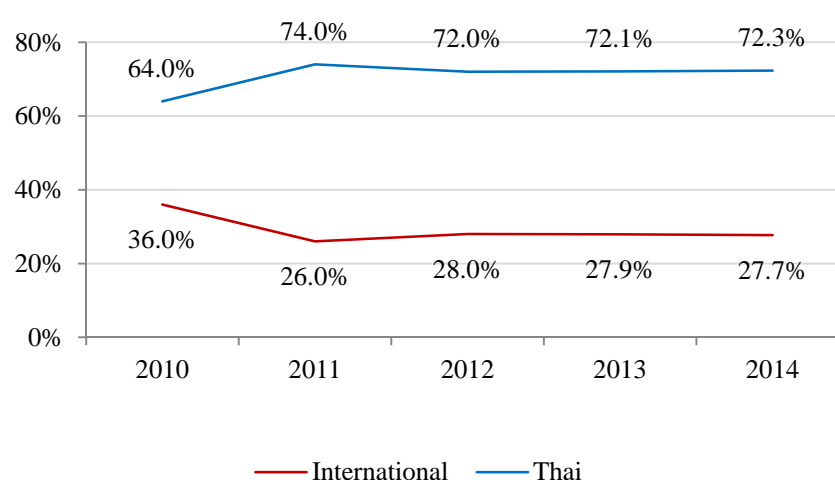
We have seen a relationship between Bed Utilization and ROA. As bed utilization rate goes up, ROA rise as well. This is explainable as hospital operation has a very large fixed cost, the higher utilization will generate marginal income. As newly open hospitals have only 40-50% utilization rate over first few year, this present a big upside for BDMS.



**Figure 8.8 Historical bed utilization against ROA**

### 8.3.6 International Patients Portion Drop

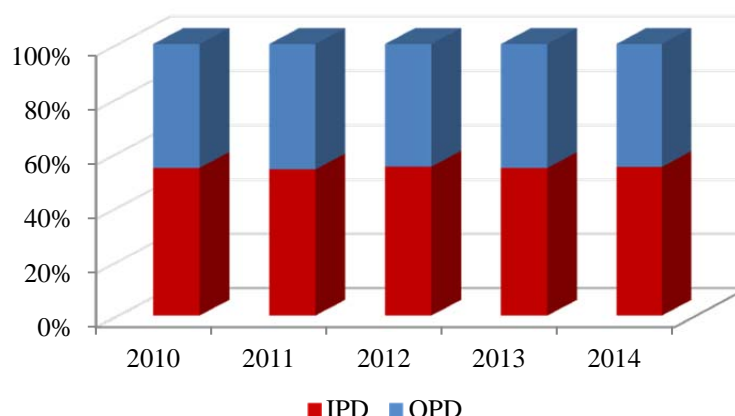
Though medical tourist in Samui, Phuket & Pattaya drop a bit from economic downturn in Europe & Russia, this mainly due to the fact of weak currency of their home country. In overall, ratio of local/international patients is driven by the large expansion in upcountry area which mainly get local patient, result in larger local patient in the patient mix. But we expect the international patient to get back to 70:30 ratios and drive the operation margin up as BDMS has better margin on this patient base.



**Figure 8.9 Historical customer trend**

### 8.3.7 OPD / IPD

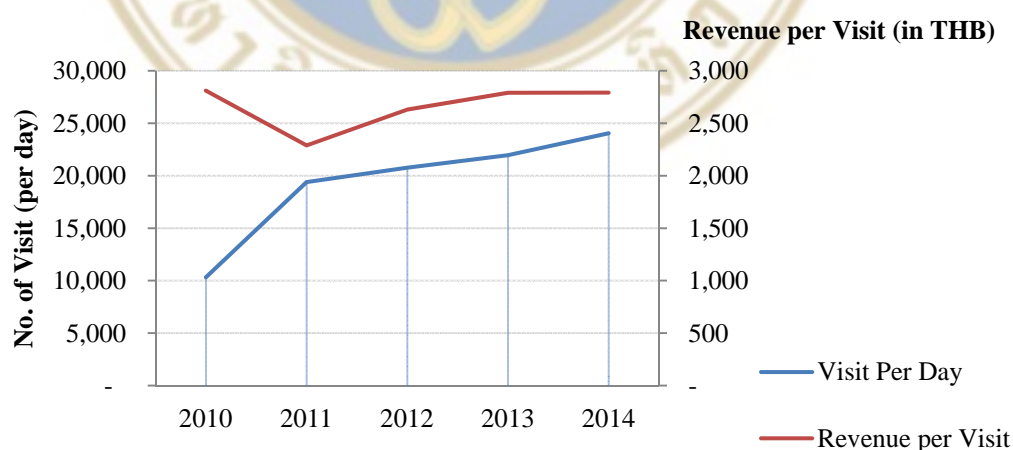
Start from forecast revenue, it consists of 2 major part, Outpatient (OPD) and Inpatient (IPD). OPD are the patient who visit the doctor but do not need to stay at the hospital. IPD are the patient who stay overnight at the hospital, for example, recovery after operation. IPD & OPD make up 45% & 55% of revenue respectively. We assume that this ratio will likely stay at this level overtime.



**Figure 8.10 Historical IPD & OPD customer**

Source : BDMS 56-1, 2014

Revenue from OPD, we break down into 2 compositions, number of visit multiply with average revenue per visit. Over the last 5 years, we have seen an increase in number of visit. This is mainly driven by the acquisition of Phayathai & Paolo Hospital in 2011. However, the revenue per visit was also dropped significantly after acquisition due to the different in customer base and pricing. But this figure slowly increases overtime together with increase in number of patient visit.

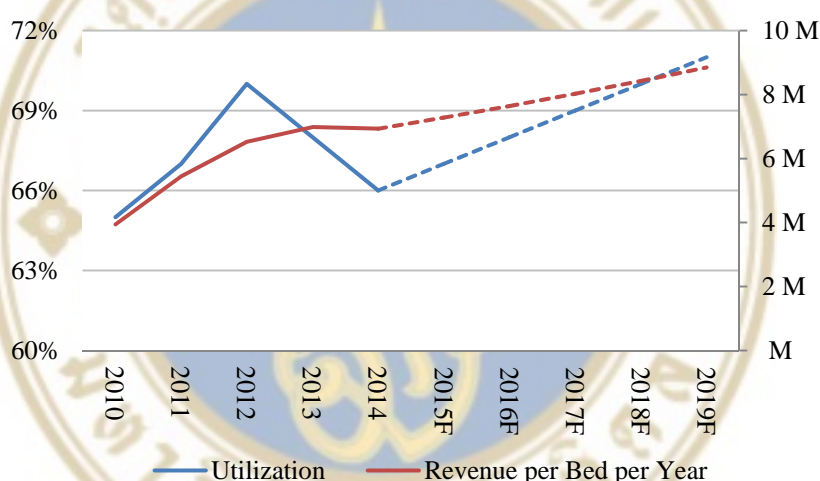


**Figure 8.11 Historical revenue per visit against number of patient visit**

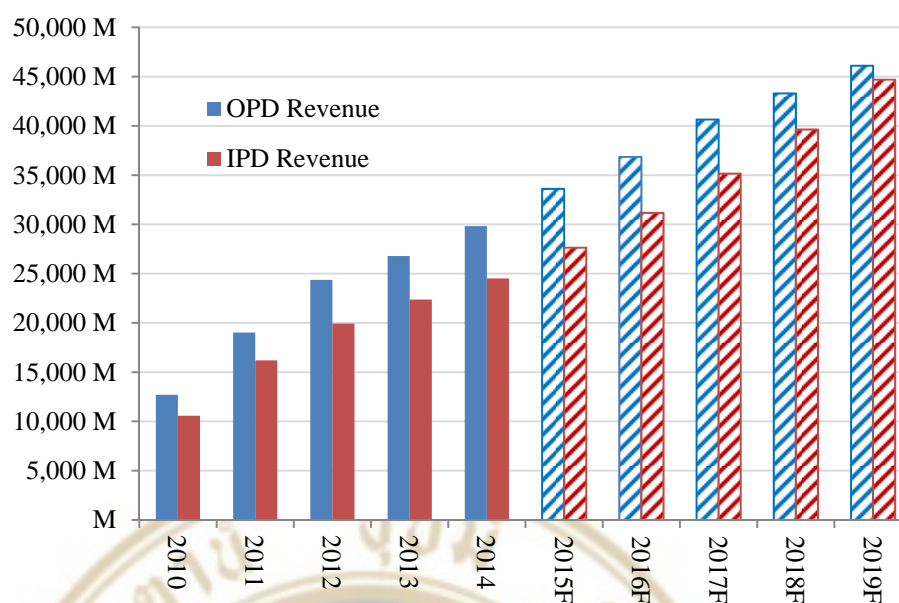
Source : BDMS 56-1, 2014

This can help contribute to revenue growth for BDMS, but mainly in term of number of visit which we expect to growth 10% every year. As BDMS expand to upcountry area, we expect a slow growth in revenue per visit of only 5%.

For IPD, this make up around 55% of total revenue. This will be the main driver for revenue growth because the bed utilization is only 66% in 2014. This because of new 8 hospitals open up in this year which bed utilization is low initially. But we expect the utilization will gradually increase over time. We put a conservative number of 1% increase per year. Revenue-per-bed growths at the lower rate. This is driven an increase in upcountry hospital which generate lower than average revenue per bed. In total, we forecast a revenue growth of 13-15% from 2015 – 2019.



**Figure 8.12 Projected bed utilization and revenue**



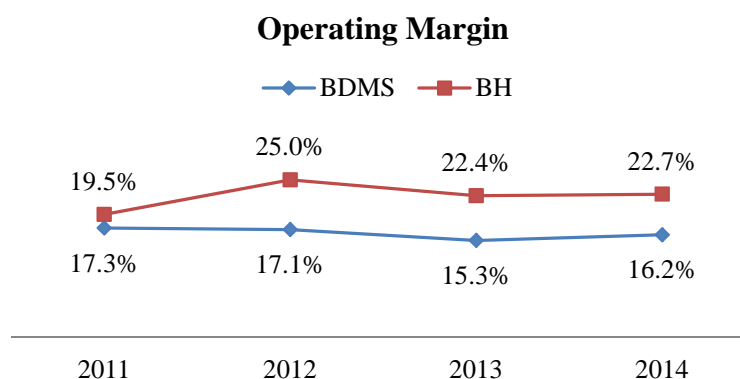
**Figure 8.13 Projected OPD & IPD revenue**

## **8.4 Financial Ratios : Return**

### **8.4.1 Operating margin**

BDMS has cost of revenue in 63% - 64% range, while BH managed to drop cost from 62.5% down to 59.7%. BDMS's higher cost of revenue is driven by new hospitals that are recently open. During first few year, newly open hospital will has utilization rate of only 40-50%. So fix operation cost lead to higher overall cost of revenue. Administrative for both firm stay very stable over the year. We would give this a plus on BDMS score as they open up many new hospitals but can manage to keep this expense stable.

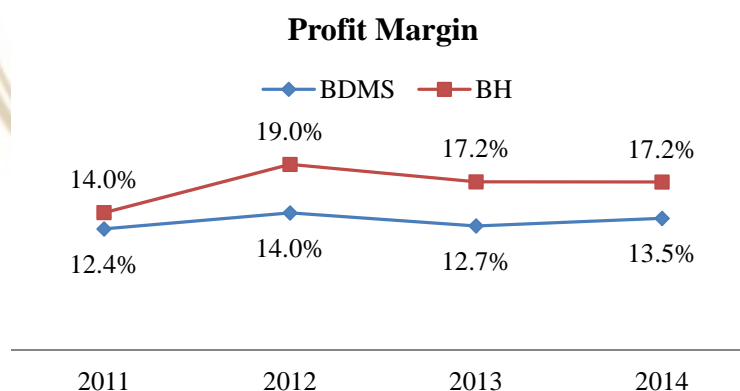




**Figure 8.14 Historical operating margin, comparison between BDMS & BH**

### 8.4.2 Profit margin

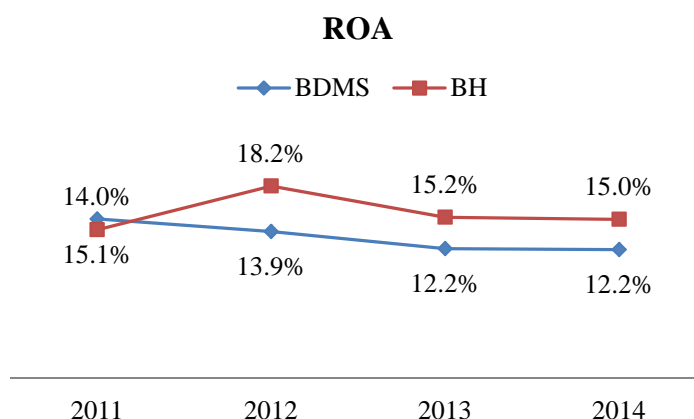
BH has higher profit margin from efficient operation, lower financial expense which help BH achieve 17.2% profit margin. BDMS has open many new hospitals so we cannot expect efficiency to get to BH's level in the near future. But in long run, we expect BDMS to get better efficiency and yield better profit margin after their utilization rate goes up.



**Figure 8.15 Historical profit margin, comparison between BDMS & BH**

### 8.4.3 Return on asset (ROA)

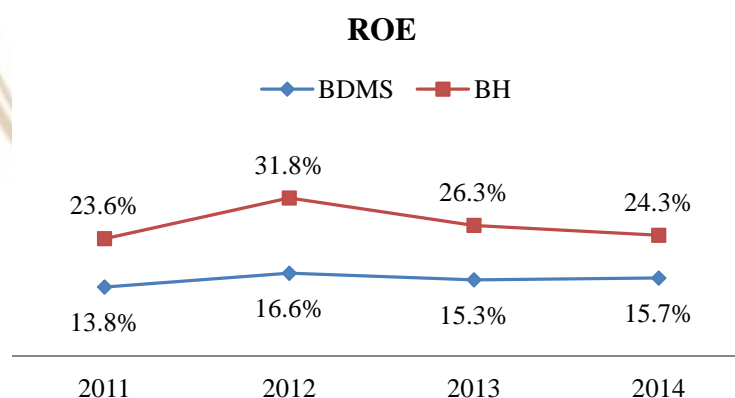
As expect, BDMS yield a significant lower ROA due to the large amount of PP&E (from 46 hospitals). On the other hand, BH operates only 1 hospital, so their asset is much lower and much more efficient. The declining trend is also a part of business expansion (more PP&E)



**Figure 8.16 Historical ROA, comparison between BDMS & BH**

#### 8.4.4 Return on equity (ROE)

ROE of BDMS is lower than BH but less fluctuate, thanks to larger customer base which help stabilize the revenue and net income. Unlike BH, BDMS's facility utilization is still considerably low at 66%. This presents an upside for BDMS to grow. AS we can see that BDMS's ROE is picking up, while BH is driven down.



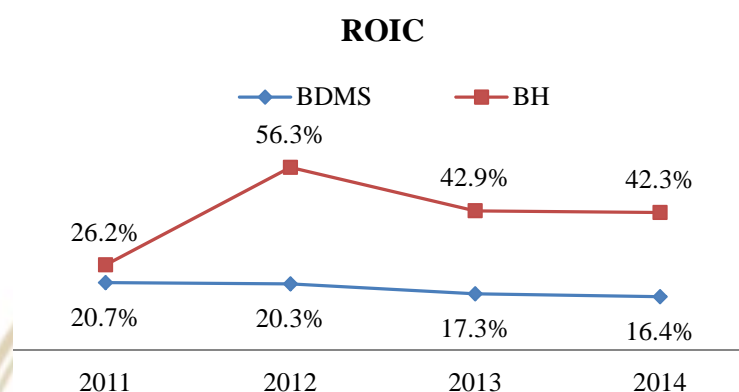
**Figure 8.17 Historical ROE, comparison between BDMS & BH**

#### 8.4.5 Return on invested capital

ROIC is the measurement of how firm can generate a return from invested capital. This is calculated by

$$ROIC = \frac{\text{NetOperatingProfit} - \text{AdjustedTaxes}}{\text{InvestedCapital}}$$

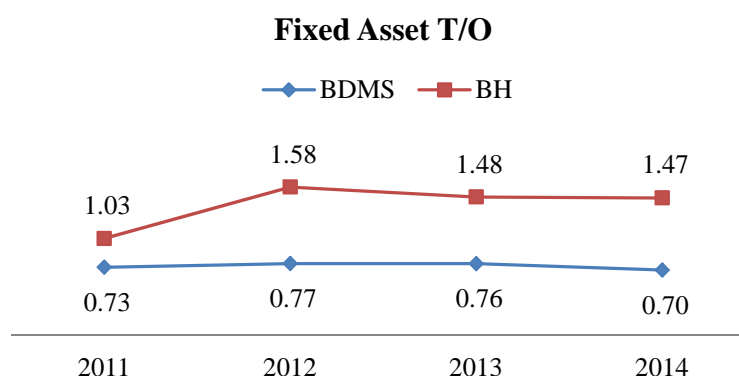
We have seen a decline in BDMS's ROIC as they invested heavily to support their aggressive expansion. Unlike BH that invested capital is in mature stage and running at full capacity. BDMS's ROIC should picking up after their utilization is back on track.



**Figure 8.18 Historical ROIC, comparison between BDMS & BH**

#### 8.4.6 Fixed asset turnover

With this ratio, we would like to see how firm can utilize their fixed asset to generate turnover. It is calculated by dividing revenue by fixed asset. We can see a slightly drop in BDMS as they invest heavily in fixed asset. While BH held considerable less amount of fixed asset.

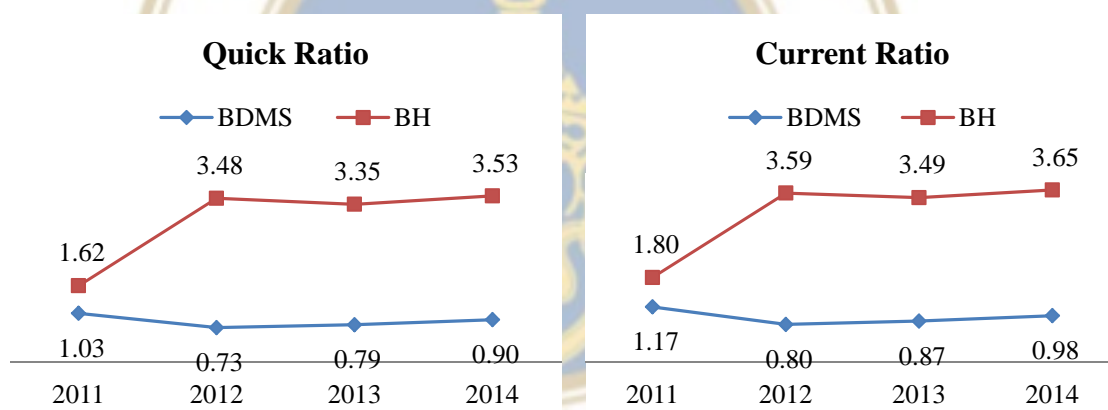


**Figure 8.19 Historical fixed asset turnover, comparison between BDMS & BH**

## 8.5 Financial Ratios: Risk

### 8.5.1 Short-term risk

Quick Ratio & Current Ratio, these two ratio give us an overview of how well the firm can manage to meet the obligations with their liquid asset. We can see that BDMS manage to have lower-than-1 ratio in both field. This may leave BDMS expose to risk as they do not have enough short-term liquid assets to meet the obligations. On the other hand, BH had increase the hold of idle cash tremendously in 2012. That was the increase from 1.2 billion in 2011 to 6 billion in 2012. Firm with high quick & current ratio can be perceived as a high liquid, save firm. But from investor's point of view, too high ratio mean high working capital required. This high ratio also mean a longer cash conversion cycle (CCC).

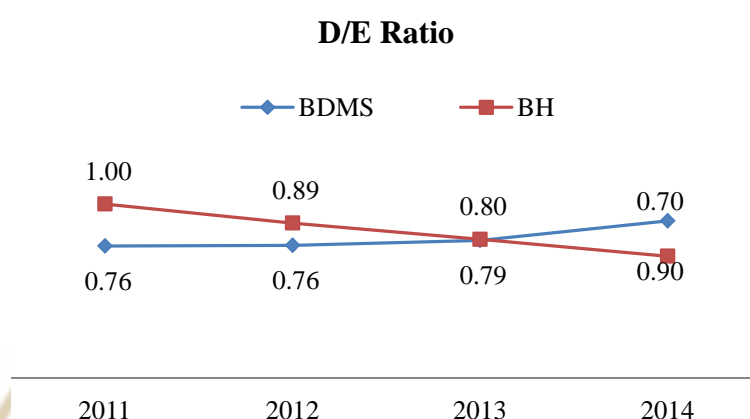


**Figure 8.20 Historical quick & current ratio, comparison between BDMS & BH**

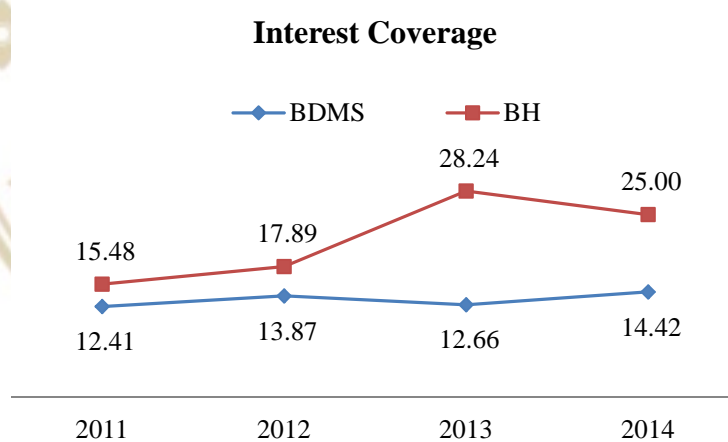
### 8.5.2 Long-term solvency risk

Now we look at the long-term risk coverage. That is Debt to Equity ratio in which tell us how much debt is in proportion with shareholder equity. We can see a totally difference in these 2 firms. BDMS is using aggressive expansion strategy and their retain earning cannot fund every project. So BDMS has to source their fund externally. While BH is focusing on only 1 hospital and try to increase their efficiency thru small project which can be fund internally. BH also has an increase in retain earning of around 1 billion Baht every year which lead to lower D/E ratio. Interest coverage stays relatively stable despite the fact that BDMS has an increase in debt level over last 2

years. This mean that their newly invest project can generate enough return to cover its financial expense at the given ratio. For BH, rising in this ratio is mainly driven by higher EBITDA and stable financial expenses.



**Figure 8.21 Historical D/E ratio, comparison between BDMS & BH**



**Figure 8.22 Historical interest coverage ratio, comparison between BDMS & BH**



## **CHAPTER IX**

### **INVESTMENT RISK AND DOWNSIDE POSSIBILITIES**

#### **9.1 Investment Risk**

1. Strategic risk: Since Bangkok hospital has a plan to expand and improve its business in oversea and upcountry in Thailand. Bangkok hospital needs to be very careful in doing research and analysis in each investment. Bangkok hospital has to compete with the private hospital in domestic like Bumrungrad hospital and other private hospital in South East Asia such as Singapore, India and Malaysia. Thus, it is crucial to choose and plan the strategy in the investment strategy. To accomplish the goal, Bangkok hospital needs to find the suitable teams which have the high performance and experience to estimate cost and return in each investment.

2. Operation risk: Bangkok hospital has lots of subsidiary and network hospital in Bangkok and upcountry. It requires a lot of staffs to operate, and information system to serve activities and operational resource. However, another factor that Bangkok hospital has to concern is the risk that effects on the customers safety, which directly damage the reputation of BDMS. Therefore, the operational risk will come of the management of the organization.

3. Rising staff cost pressure: Aforementioned, Bangkok hospital requires high number of employees to operation the business. BDMS's open consists of doctor fees(36%), other staff (24%), drugs & medicine (22%) and other costs(18%). Staff cost is the largest component of BDMS so the business may face rising staff cost as a big problem due to increased demand from both the public and private healthcare sector.

4. National Disaster: Since Bangkok hospital has its subsidiary and network hospital through Thailand, especially in Phuket branch which is located near seaside. Bangkok hospital might face with national disaster which is ruined its properties and harassed operational activities. Thus, Bangkok hospital should set up the management team which was well-trained to handle with a different kinds of national disaster and

also create a short-listed of things to do when the company has to cope with the unexpected situations in the future.

5. Political uncertainty: Thailand politic situation is never stable. Therefore, the management team has to set up the backup plan in order to handle with unexpected situation which can be effected to business operation negatively. Anyway, Bangkok hospital should have a various kinds of plans to serve the different level of emergency.

## **9.2 Financial Risk**

1. Foreign currency risk: Bangkok hospital and its network hospitals exposed to foreign currency risk in terms of acquiring medical tools and equipment. Bangkok hospital enters forward exchange contracts mature within one year in order to protect volatility.

2. Interest rate risk: Most financial assets of Bangkok hospital; such as cash at banks, bank overdrafts, short-term loans, long-term loans, and debentures rely on floating interest rates and fixed interest rates. However, Bangkok hospital enters into interest rate swap contract in order to handle with this volatility. In April 2014, the company entered into a 5-year loan agreement with a financial institution granting credit facilities of Baht 1,000 million carrying interest at the rate of three-month BIBOR plus fixed rates per annum as stipulated in the agreement. The interest and principal are repayable on a monthly basis according to a condition as stipulated in the agreement. As at 31 December 2014, this loan has outstanding balance of Baht 1,000 million.

3. Risk metric: Bangkok hospital tends to has moderate level in strategic risk since the company owns 34,031 beds though the whole country. It implies that Bangkok hospital has a superior management team than its rivals but there still have some bad chances happened which make the management teams goes wrong in their decision.

**Table 9.1 BDMS's risk matrix**

| Risks                 | 1 | 2 | 3 | 4 | 5 |
|-----------------------|---|---|---|---|---|
| Strategic risk        |   |   | + |   |   |
| Operational risk      |   |   |   |   |   |
| Rising staff cost     |   |   |   | + |   |
| National disaster     |   | + |   |   |   |
| Uncertainty politics  |   | + |   |   |   |
| Financial risk        |   |   |   |   |   |
| Foreign currency risk |   |   |   | + |   |
| Interest rate risk    |   |   |   | + |   |

For Operational risks, apart from a large sum of money that Bangkok hospital needs to spend on staff training activities, high staff turnover leads to the chaos in the business. Therefore, Bangkok hospital should punctiliously concentrate on selecting and training for its staffs in order to avoid the rising in staff cost. Moving to politics and national disaster, Bangkok hospital gets low level in both topics. Even though political situation in Thailand is not quite stable, compared to other South East Asian countries and there still has a chance for national disaster to emerge in Thailand. But the situation is not happened often. Therefore, Bangkok hospital does not have to take it into account much. Lastly, Bangkok hospital needs a large sum of money to operate and expand the business. However, Bangkok hospital already entered swap contract for foreign currency and interest to handle with the volatility. But there is no guarantee for the future situation, if the situation turns into the other side. This method leads Bangkok hospital to expose will higher risk. To sum up, these financial risks are the biggest concern for Bangkok Hospital.

### 9.3 Downside Possibilities

1. New outbreak threatens: It is hard for BDMS to take actions in order to prevent and respond to threats that endanger the collective health of the population. This point has an impact on economic or political stability, trade, tourism, access to goods and services and, if these outbreaks occur repeatedly, on demographic stability. BDMS needs to take account on a wide range of complex and daunting issues, including the health consequences of human behaviour, climate change, weather-related events and infectious diseases, as well as natural catastrophes and man-made disasters, suitable solution for medical treatment, all of which may lead to over spending on the company expenses in terms of R&D.

2. Medical shortage: When drug companies have failed to build enough production capacity, haven't maintained equipment, and failed to ward off contamination in aging plants. The quality unintentionally worsened the shortages because some companies responded by shutting down plants or scaling back production during renovations. As a result, healthcare industry like BDMS will buy pharmaceutical products from the leftover manufacturer in order to save the drug for cases where it may prevent patients from illness. Then, BDMS will suffer from high cost of pharmaceutical products and low profit. In this case, BDMS can't easily increase prices because it has to maintain the same market share with the high growth to support the expansion plans.

### 9.4 Sensitivity Analysis

Each factor can affect share firm value, so we prepare some sensitivity analysis to give an overview on how share price reflect to each factor change. We utilize DCF method for valuation in this sensitivity analysis

1. Terminal Growth & Cost of Capital : These 2 components are the main driver to determine the target price. As it has a big impact on share price, only slight change in these 2 parts can turn the recommendation around. However, these 2 factors are just the forecasted number which we cannot really predict precisely. So, it is just a best case/worst case scenario.

**Table 9.2 Sensitivity analysis, WACC vs terminal growth**

|                 |      | WACC  |       |       |       |       |       |
|-----------------|------|-------|-------|-------|-------|-------|-------|
|                 |      | 6.25% | 6.50% | 6.75% | 7.00% | 7.25% | 7.50% |
| Terminal Growth | 2.5% | 9.96  | 9.16  | 8.45  | 7.82  | 7.26  | 6.75  |
|                 | 3.0% | 11.67 | 10.63 | 9.73  | 8.95  | 8.25  | 7.63  |
|                 | 3.5% | 14.00 | 12.60 | 11.41 | 10.39 | 9.51  | 8.74  |
|                 | 4.0% | 17.37 | 15.35 | 13.70 | 12.32 | 11.16 | 10.16 |
|                 | 4.5% | 22.67 | 19.49 | 17.01 | 15.03 | 13.41 | 12.06 |
|                 | 5.0% | 32.20 | 26.37 | 22.21 | 19.08 | 16.65 | 14.71 |

2. Financial Expense (Interest rate & Tax rate): Over the past 4 years, BDMS has a very stable financial expense (effective interest rate) of 5%. This table show the sensitivity of target price with interest rate. Higher interest rate will drive WACC up, thus higher discount rate which leads to lower target price.

**Table 9.3 Sensitivity analysis, interest rate vs effective tax rate**

|                    |       | Interest Rate |       |       |       |       |       |
|--------------------|-------|---------------|-------|-------|-------|-------|-------|
|                    |       | 4.00%         | 4.50% | 5.00% | 5.50% | 6.00% | 6.50% |
| Effective Tax Rate | 15.0% | 23.04         | 20.19 | 17.91 | 16.03 | 14.47 | 13.15 |
|                    | 16.0% | 23.35         | 20.46 | 18.15 | 16.26 | 14.68 | 13.34 |
|                    | 17.0% | 23.66         | 20.74 | 18.40 | 16.48 | 14.89 | 13.53 |
|                    | 18.0% | 23.98         | 21.03 | 18.66 | 16.72 | 15.10 | 13.73 |
|                    | 19.0% | 24.31         | 21.32 | 18.92 | 16.96 | 15.32 | 13.93 |
|                    | 20.0% | 24.65         | 21.62 | 19.19 | 17.20 | 15.55 | 14.14 |

3. Revenue growth (OPD & IPD): Revenue is relied heavily on growth of number of visit per day (OPD), bed utilization (IPD) and medical fee growth (usually 4-6% annually). We separate in to 2 major parts, OPD and IPD to see how each part affect target price.



**Table 9.4 Sensitivity analysis, IPD vs OPD growth**

|            |       | IPD Growth (Utilization) |       |       |       |       |       |
|------------|-------|--------------------------|-------|-------|-------|-------|-------|
|            |       | 0.00%                    | 0.50% | 1.00% | 1.50% | 2.00% | 2.50% |
| OPD Growth | 27.50 |                          |       |       |       |       |       |
|            | 0.0%  | 25.88                    | 25.99 | 26.10 | 26.22 | 26.33 | 26.44 |
|            | 2.5%  | 26.33                    | 26.44 | 26.56 | 26.67 | 26.78 | 26.90 |
|            | 5.0%  | 26.80                    | 26.92 | 27.03 | 27.14 | 27.26 | 27.37 |
|            | 7.5%  | 27.30                    | 27.41 | 27.52 | 27.64 | 27.75 | 27.86 |
|            | 10.0% | 27.81                    | 27.92 | 28.04 | 28.15 | 28.26 | 28.37 |
|            | 12.5% | 28.34                    | 28.46 | 28.57 | 28.68 | 28.79 | 28.91 |

Then we take a closer look by taken revenue growth into each part, OPD & IPD.

**Table 9.5 Sensitivity analysis, OPD growth vs OPD revenue growth**

|            |       | OPD Revenue Growth (average per case) |       |       |       |       |       |
|------------|-------|---------------------------------------|-------|-------|-------|-------|-------|
|            |       | 2%                                    | 4%    | 6%    | 8%    | 10%   | 12%   |
| OPD Growth | 27.50 |                                       |       |       |       |       |       |
|            | 0.0%  | 25.61                                 | 25.94 | 26.27 | 26.62 | 26.98 | 27.36 |
|            | 2.5%  | 26.03                                 | 26.38 | 26.74 | 27.11 | 27.50 | 27.90 |
|            | 5.0%  | 26.47                                 | 26.84 | 27.23 | 27.62 | 28.04 | 28.46 |
|            | 7.5%  | 26.92                                 | 27.32 | 27.73 | 28.16 | 28.60 | 29.05 |
|            | 10.0% | 27.39                                 | 27.82 | 28.26 | 28.71 | 29.18 | 29.65 |
|            | 12.5% | 27.89                                 | 28.34 | 28.80 | 29.28 | 29.78 | 30.28 |

**Table 9.6 Sensitivity analysis, IPD growth vs IPD revenue growth**

|            |       | IPD Revenue Growth (average per case) |       |       |       |       |       |
|------------|-------|---------------------------------------|-------|-------|-------|-------|-------|
|            |       | 2%                                    | 4%    | 6%    | 8%    | 10%   | 12%   |
| IPD Growth | 27.50 |                                       |       |       |       |       |       |
|            | 0.0%  | 26.62                                 | 27.05 | 27.51 | 27.97 | 28.45 | 28.95 |
|            | 0.5%  | 26.72                                 | 27.16 | 27.62 | 28.09 | 28.58 | 29.08 |
|            | 1.0%  | 26.83                                 | 27.27 | 27.74 | 28.21 | 28.71 | 29.21 |
|            | 1.5%  | 26.93                                 | 27.38 | 27.85 | 28.34 | 28.83 | 29.35 |
|            | 2.0%  | 27.03                                 | 27.49 | 27.97 | 28.46 | 28.96 | 29.48 |
|            | 2.5%  | 27.14                                 | 27.60 | 28.08 | 28.58 | 29.09 | 29.61 |

4. Cost of revenue: Cost is also a main driver to determine share price as it has a direct effect on profit. The higher cost, the lower its profit. Though, both of these costs stay very stable, in proportion, over the last 5 years.



**Table 9.7 Sensitivity analysis, cost of revenue vs administrative expense**

|                |       | Cost of Revenue |       |       |       |       |       |
|----------------|-------|-----------------|-------|-------|-------|-------|-------|
|                |       | 60%             | 61%   | 62%   | 63%   | 64%   | 65%   |
| Admin Expenses | 27.50 |                 |       |       |       |       |       |
|                | 18%   | 31.91           | 30.74 | 29.57 | 28.41 | 27.24 | 26.07 |
|                | 19%   | 30.69           | 29.52 | 28.36 | 27.19 | 26.02 | 24.85 |
|                | 20%   | 29.47           | 28.31 | 27.14 | 25.97 | 24.80 | 23.64 |
|                | 21%   | 28.25           | 27.09 | 25.92 | 24.75 | 23.58 | 22.42 |
|                | 22%   | 27.04           | 25.87 | 24.70 | 23.53 | 22.37 | 21.20 |
|                | 23%   | 25.82           | 24.65 | 23.48 | 22.31 | 21.15 | 19.98 |

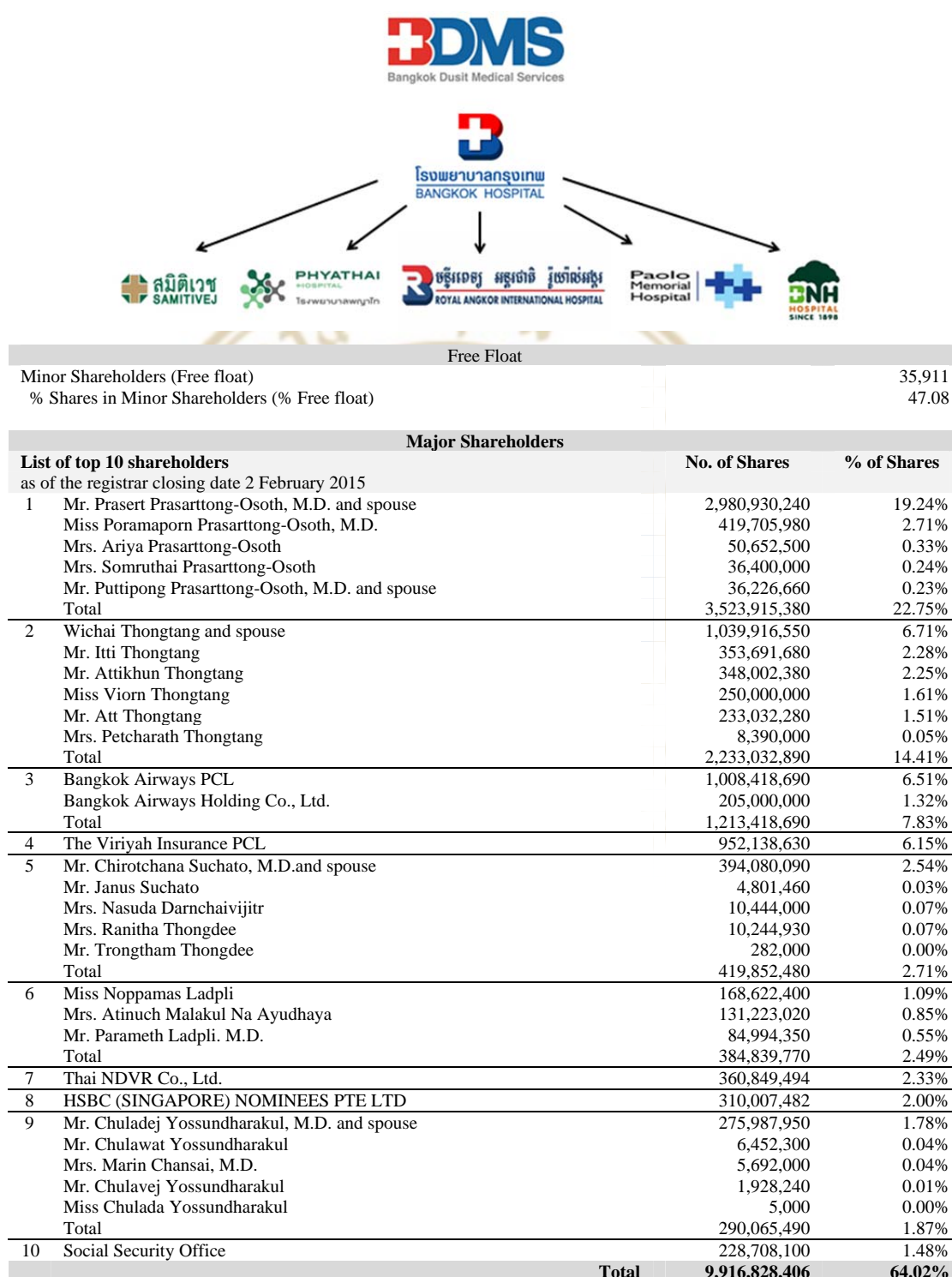


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## Appendix A: Business Structure and Hospital Network



## **Appendix B: Corporate Governance Policy**

The Board of Directors of BDMS responsible to every shareholder as well as assess economic, social, environmental and ethical factors that may significantly effects to the interests of shareholders. Apart from honesty, determination and independence of thought and decision; BDMS has also emphasized good corporate governance through integration of policy and business direction, sufficient internal controls and auditing in order to ensure that management actions will efficiently under the established policies so as to ascertain that the company is transparent, ethical and abides by the governing laws and regulations. The Corporate Governance Policy covers 5 following topics below;

### **1. Shareholders' Rights**

BDMS has the policy to support disclosure of information and business transactions so that the shareholders may better understand the Company's operations. Major and minor shareholders, institutional investors and foreign investors equally receive information on business operations, management policy and the financial statements of the company and have the right to be treated fairly.

### **2. Equal treatment of shareholders**

BDMS is aware of its responsibility to rights without bias and with equal treatment of all shareholders. It is the Company's duty to protect the rights and interests of the shareholders, including the right to receive dividends and receive relevant information regularly and in a timely fashion.

At each Shareholders' Meeting, BDMS will distribute the letter of invitation in advance to inform the shareholders of the meeting agenda with opinion of the Board of Directors on each agenda and other documents. In addition, BDMS has posted the letter of invitation on the website 30 days in advance of the meeting date.

Moreover, BDMS has a policy to give shareholders the opportunity to submit questions and to propose agendas for the Annual Shareholders' Meeting. The Company gives this opportunity for a period of 45 days and interested shareholders can access

information on guidelines and conditions in proposing agendas and nominees on the Company's website.

During the Shareholders' Meeting, the process of voting and counting votes is carried out swiftly with full disclosure. The results of the voting are recorded in the minutes of the meeting. In the case that any shareholder has a special stake in any of the agendas, the shareholder is not allowed to vote on that agenda with the exception of voting for appointment or removal of directors.

### **3. Policy on stakeholders' interests:**

3.1 Policy on Employees: Since BDMS views employees as a valuable asset, it has arranged for the necessary training by both internal and external persons in order to continuously enhance the skills of employees. Moreover, it supports and promotes the healthy working environment and organizational culture, and treats employees equally. Employees are provided with benefits and safety which include medical benefits, provident fund and academic scholarships for doctors, nurses and employees so that they may use the knowledge to assist in the development of the organization.

BDMS has put in place guidelines in human resources management from recruitment and training to maintaining quality personnel as follows:

Recruitment and Career Advancement; BDMS gives priority to internal staff in order to provide an opportunity for career advancement before consider external candidates. Each new employee is required to attend orientation in order to be informed about the working process of the various departments within the organization. This will enable employees to plan and act according to the objectives set.

Employee Training; BDMS organizes both internal and external training sessions. Apart from training on work skills organized internally, the Company also encourages employees to exchange knowledge and experience among the various departments, be it through meetings or information exchange through the intranet. For external training, the Company encourages employees to fill out questionnaires on training desired and will send them to attend those training sessions as appropriate.

Employee Evaluation; Employees will be evaluated based on their capabilities and potential in terms of skill, knowledge, attributes and performance.



Employee Engagement Surveys; BDMS has specified that surveys be conducted of employees at all levels to gather opinions and suggestions. The information gathered can be used to correct and/or improve any shortcomings in management of the organization and personnel both in the short and long term.

Provide Better Quality of Life for Employees; In terms of health, BDMS provides annual medical check-ups for employees. Furthermore, if the number of employees in any department is insufficient for the amount of work assigned, the company will employ additional employees so that the amount of work is suitable for the number of employees to better the quality of life for all.

Build Solid Management and Intra-Working Systems; Every department has contributed to the Operational Manual to be used as a guideline in communicating and coordinating among departments within the organization. The manual is accessible by all through the intranet and is reviewed and revised as appropriate.

Build Good Relationship between Management and Employees; BDMS always organizes activities between management and employees which will improve the relationship between the two and encourage contentment in the work place; such activities include New Year's Party, merit making and sports events. In addition, management meets regularly with employees in order to exchange views. This will enable the organization to efficiently and effectively reach for the same goals.

Create First-Rate Employees for the Organization and Society; According to the regulations by taking into consideration good corporate governance as defined by the Company, BDMS believes that developing employees into good and outstanding individuals will ensure the organization's stable and sustainable growth.

3.2 Policy on management: BDMS has set up suitable compensation programs which is comparable to management in the health care business. It is able to carry out its duties and responsibilities independently without intervention.

3.3 Policy on counter-parties: BDMS has the policy to avoid any actions which may be dishonest or infringe on the rights according to the law or as mutually agreed upon of the counter-party such as partners, competitors, creditors, counter-parties and others according to the terms and conditions in the trade agreement, as well as to ensure that the transactions are ethical business-wise.

3.4 Policy on customers: BDMS strives for customer satisfaction by providing quality professional service with the determination to continuously improve the quality of medical care services in order to meet the needs and expectations of the customers.

3.5 Policy on social responsibility and the environment: BDMS involved with public interest and had participated in activities which benefit the community as well as the environment. It is the Company's policy to act responsibly towards society, related persons and personnel within the organization. Bangkok hospital is the first starter to adopt ISO 14001 for Environmental Management and Mor Or Gor. 18001/OHSAS18001 for Occupational Hygiene and Safety. Moreover, BDMS has participated in many charitable activities and has supported the employees' concerns regarding the environment and the community.

#### **4. Disclosure and transparency**

BDMS has the policy to disclose the financial statements, important information and any other information which may affect the interests of the shareholders or the decision to invest in the Company, which in turn, may affect the price of the shares and securities of the Company. The main purpose is to ensure that the decision to invest in securities of the Company is made fairly and with equal information. Furthermore, in communicating to external parties, executive management who have been assigned the task of disclosing information about the Company are the President, the Chief Financial Officer and Financial Director.

In 2014, the executive officers, including the Financial Director (Investor Relations) met with and provided information at the following opportunities:

- Road shows: 3 domestically, and 3 abroad (6 times in total)
- Analyst Meetings: 4 times
- Received Company Visits and Conference Calls: 188 times
- Site Visits: 16 times

## **5. Responsibility of the Board of Directors and sub-committees**

The Board of Directors consists of 15 members, 6 of those being Executive Directors, 3 being Non-Executive Directors, and 6 Independent Directors.

Executive Directors; they are involved full-time in the management of BDMS and receive monthly compensation, whether it be a monthly salary or other forms of compensation consistent with the BDMS's regulations or benefit plans.

Non-Executive Directors; they are directors who are not involved full-time in the management of BDMS. These directors may be appointed or be representatives of major shareholders.

Independent Directors; they are directors who are not involved in management of BDMS, subsidiaries, associates or related companies with independent management, major shareholders nor have authority to take over the business. Furthermore, the Independent Directors must not have a business or be involved with the interests of the Company, subsidiaries, associates or related companies, which may negatively affect the interests of the company and shareholders.

Qualifications of Independent Directors, which the Company has set according to regulations of the SEC, are as follows:

1. Hold less than 1.0 percent of the voting shares of the Company, its subsidiaries, associates or affiliates, or juristic persons with conflicts of interest.
2. Is not/has not been an executive director, staff, employee, salaried advisor or person with controlling power of the Company, parent company, subsidiaries, associated companies, same level subsidiaries, major shareholders or persons with controlling power, unless that status has ended for no less than 2 years prior to the appointment. This restriction shall not apply to an independent director who has been a civil servant or an advisor to a government authority that is a major shareholder or controlling person of the Company.
3. Is not a blood relative of or has a legally registered relationship as father, mother, spouse, sibling and child, as well as spouse of child, with management, major shareholders with controlling power or individuals to be proposed as management or those having controlling power over the company or subsidiaries.
4. Does not have/has not had business relationship with the Company, parent company, subsidiaries, associated companies, major shareholders or persons

with controlling power, in a way that may hinder one's independent judgment. In addition, the individual must not be/have been a substantial shareholder or a person with controlling power of an entity that has a business relationship with the Company, parent company, subsidiaries, associated companies, major shareholders or persons with controlling power, unless that status has ended for no less than 2 years prior to the appointment.

5. Is not/has not been an auditor of the Company, parent company, subsidiaries, associated companies, major shareholders or persons with controlling power of the Company and is not a substantial shareholder, a person with controlling power or partner of an audit firm which employs auditors of the Company, parent company, subsidiaries, associated companies, major shareholders or persons with controlling power, unless that status has ended for no less than 2 years prior to the appointment.

6. Is not/has not been a professional advisor, which includes legal counsel and financial advisor, who receives a service fee exceeding Baht 2 million per year from the Company, parent company, subsidiaries, associated companies, major shareholders or persons with controlling power and is not a substantial shareholder, a person with controlling power or partner of the professional advisor, unless that status has ended for no less than 2 years prior to the appointment.

7. Is not a director who has been appointed as a representative of the Company's directors, major shareholders or a shareholder who is a related person to a major shareholder.

8. Not conducting any business which is of the same nature as or in material competition with that of the Company or its subsidiaries, nor be a substantial partner, executive director, staff, employee, salaried advisor, or hold more than 1% of total shares with voting rights of any company whose business is of the same nature as or in material competition with that of the Company or its subsidiaries.

9. Not possess any other characteristics which may render that person incapable of expressing independent opinions with regards to the Company's operations.

Anyway, each director has the duty and responsibility to determine and monitor the operational policies of BDMS, apart from the duties and responsibilities as stated in "Shareholding Structure and Management", the duties of the Directors include the following:



1. Directors should have sufficient access to financial information and other business information so that he/she may carryout duties efficiently.

2. Directors should attend every Board meeting as well as sub-committee meetings, and raise important questions to protect and maintain the rights and interests of the shareholders and stakeholders to ensure proper business conduct and operations.

3. Directors should attend every shareholders' meeting, especially Directors who have been appointed to the Audit Committee, in order to answer and provide explanations to the shareholders' queries, as well as acknowledge suggestions from the shareholders.

4. Directors should be capable and have the intention to learn about the Company's business, as well as share opinions independently, devote time to the Company as needed and show interest in the important issues.

5. Independent Directors should submit a letter to the Company to confirm that he/she is truly independent, according to the Company's definition, on the day that he/she has accepted the appointment to the position and each year after such appointment.

6. Directors must submit and update their personal stake and report changes in securities held by him/her, his/her spouse as well as children under juristic age (if any) to show transparency and must report any changes to the Board of Directors' meeting.

7. Any other duties of the Directors as stipulated in notifications, acts or laws governing the Company.

As for remuneration of executives, BDMS will award remuneration by performance evaluation as stated in the guidelines defined by the Board of Directors and the Human Resources Department for each level of management. The performance is linked to the operational results of the Company and individual accomplishments.

## **6. Directors' Knowledge Enhancement**

BDMS has the policy to encourage directors of the Company and subsidiaries to attend the Director Certification Program (DCP) and the Director Accreditation Program (DAP) organized by the Thai Institute of Directors (IOD). The programs will provide the directors with knowledge and understanding of efficient corporate governance and will enable them to use the knowledge for continuous good corporate governance.

Fifteen of the directors have attended and passed the Director Certification Program and/or the Director Accreditation Program. The Company also encourages directors to attend training courses on amendments and updates of the regulations, policies and guidelines of the Stock Exchange and the SEC.

## **7. Sub-Committees**

The Board of Directors resolved to appoint three sub-committees, namely, the Audit Committee, the Nomination and Remuneration Committee and the Executive Committee, to assist in ensuring corporate governance, internal control and to filter issues. The Board has also clearly separated the duties of each committee by prescribing the responsibilities in the respective committee's charter.

Audit Committee; the Committee is comprised of three independent directors and each member serves for a term of three years. The Audit Committee is granted full authority by the Board of Directors to carry out its duties, which include systematic monitoring of business practices, ensuring efficient and strict internal control measures, ensuring compliance with laws on disclosure and determining risk management dealing with the business and finances of the Company.



## **Appendix C: SWOT Analysis**

### **1. Strength - Complete medical hub solutions with the great efficacy operations:**

BDMS is concentrated in Bangkok and various high-income patients in the southern and eastern regions of Thailand. The company covers all major medical services group by merging and investing in other private hospitals and also operating more than 5,000 beds located in Thailand's popular tourist destination such as Pattaya, Phuket and Samui and in the neighboring country of Cambodia. Being as a leading network health-care provider, the company provides the needs for Thai and foreign patients with international standards medical treatments and technologies. In terms of technologies, BDMS is the first starter who launched and operated "B-eXchange" in Thailand. This program connects medical records in its hospital network into one centralized system to improve patient care capability. Moreover, Advanced 3D Laparoscopic Surgery is upgraded and used at three major centers of BDMS (the Bangkok Surgery Clinic, Bangkok Women's Health Center and Bangkok Urological Center). This new technology will provide natural 3D vision and depth perception while performing laparoscopic procedures. As a result, it offers small wound, less pain and fast recovery to patient. And the last new technology is Hybrid OR. It combined Flex Move Heart Navigator and Software Heart Navigator altogether. Giving 360 degrees freely rotate ability to x-ray and duplicate heart's image in detail. Plus, Hybrid OR is also combines the Catheterization Unit and the Cardiothoracic Surgeries into one room. In the case that there are complications, the surgeons can immediately operate without having to move the patient.

### **2. Weakness - Lack of System Integration and slow technology adoption**

Since B-eXchange stepped in a hospital system. BDMS is not reaching the level of system integration. Especially, when the patient received a different kinds of medical treatments with various other healthcare-related entities, BDMS can only adopted data from the centralized computer-based but cannot get data from other remote subsidiary. In addition, many network hospitals still have not had a chance to operate the new technology treatments like BDMS. As noted earlier, some patients need to be sent to BDMS its subsidiary cannot provide specific treatment to them. Therefore, the company

has to generate the budget in order to improve the capability of technologies to its network hospital equally.

### **3. Opportunities - Rising in retirement population**

According to data from CIA world factbook, It found that in 2015, Thailand has the population in age of 25-54 years: 46.69%, 55-64 years: 11.26% and 65 years or more: 9.86%. The aging people tend to be increased to 44.46% in the next 5 years. This age structure of a population affects a nation's key socioeconomic issues. The increase in older populations like Thailand (high percentage ages 65 and over) needs to invest more in the health sector.

Favorable external environment - There is growing support worldwide for Medical tourism in Thailand. Reported from BBC, Medical tourism in Thailand is gradually growing at a yearly rate of 16%, while in financial terms the foreign medical services sector is expected to make a whopping 100 billion baht by 2015. Currently, medical tourism makes up 0.4% of the GDP, while tourism overall accounts for 6% to 7%, the third most important economic driver in Thailand. To compare, the Thai automotive industry accounted for 12% of GDP last year, while manufacturing led the way accounting for 36% of GDP in 2011. As a matter of fact, healthcare business still has a chance to maximize its profit from its advantages.

### **4. Threats - The lack of retaining medical personnel or crucial executives**

Physicians, nurses, pharmacists and technicians are the most important part for healthcare business. Thus, the failure to retain medical personnel or crucial executives, and not being able to replace them with comparable personnel may have negative effects on the Company. BDMS needs to compete with other hospital operators in retaining and attracting skilled medical personnel all the time, which may affect the Company's operational costs.

Operational obstacles - BDMS operates under the supervision of the Ministry of Public Health and other related government agencies. It is important for the company to earn a license in order to operate a health care business and health clinics. In addition, any changes in the interpretation of current regulations or enforcement of laws or new regulations or policies that are likely to be stricter, may impact the Company's operations.

The enforcement of laws or new regulations which protect persons who have been received damages from health care services makes the company plans to set protection fund with the standard rate of compensation up in order to pay to its patients. Therefore, the Company may not be able to guarantee that future changes to laws and regulations or issuance of new regulations or new policies related to the Company's business will not affect the Company's operations and business opportunities.



## Appendix D: Five Force Analysis

**1. Competitive rivalry** Bangkok hospital faces intense competition from other gold standard hospital in medical tourism such as Bumrungrad Hospital in terms of medical technologies. Bumrungrad hospital offers monotonic style; giving each department has its own lobby, which looks out onto the hall while Bangkok hospital provides a modular specialty hospitals. For example; Bangkok Hospital Phuket is renowned as a world leader in sex-change operations, but is also a state-of-the-art hospital for more mundane purposes and nothing beats Phuket's beaches for physical therapy and recuperation after a surgery in Bangkok, which the Phuket Hospital supervises and coordinates.

**2. Bargaining power of suppliers** Bangkok hospital sticks with the same supplier base in order to lift the bargaining power. In 2014, Bangkok hospital and its networks started to operate Central Procurement system in order to increase its purchasing power with a restrict quality control for medical supplies.

**3. Bargaining power of customers** Patients who use benefit from welfares or health insurances in medical treatment hold a certain degree of bargaining leverage, as they could substitute Bangkok hospital with other hospitals' in order to obtain more promotional packages. Bargaining power of domestic patients who are self-pay is lower as Bangkok hospital enjoys strong brand recognition in terms of luxury hospital.

**4. Threat of new entrants** Large capital costs are required for acquisition activities, improving high medical technologies both in Bangkok and upcountry hospitals. Therefore, Bangkok hospital limits the new entry from expanding its businesses which can deprive market share from Bangkok hospital. The luxury hospital like Bumrungrad or Vibhavadi hospital could enter the medical performance in order to compete with Bangkok hospital in the future.

**5. Threat of substitute products** Since the cost medical treatment in Thailand is far lower than Europe and other Asian country, with the equal quality of medical processes; The demand for healthcare industry is expected to continue. Thus, we think this force does not threaten Bangkok hospital in the foreseeable future.

## Appendix E: Projected Income Statement

| Income Statement (in million)                              | Y2011         | Y2012         | Y2013         | Y2014         | Y2015E        | Y2016E        | Y2017E        | Y2018E        | Y2019E        |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Revenue</b>   |               |               |               |               |               |               |               |               |               |
| Revenue from Hospital Operation                            | 35,224        | 44,307        | 49,170        | 54,341        | 61,242        | 68,017        | 75,793        | 83,870        | 94,947        |
| Revenue from Sales of Foods & Goods                        | 1,009         | 1,171         | 1,446         | 1,712         | 1,883         | 2,072         | 2,279         | 2,507         | 2,758         |
| Interest Income & Gain from ST Investment                  | 63            | 57            | 63            | 77            |               |               |               |               |               |
| Dividend Income  | 104           | 17            | 37            | 215           |               |               |               |               |               |
| Gain on fair value adjustment                              | 479           | 1,795         | 148           |               |               |               |               |               |               |
| Other  | 492           | 516           | 543           | 629           |               |               |               |               |               |
| <b>Total Revenue</b>                                       | <b>37,371</b> | <b>46,067</b> | <b>51,407</b> | <b>56,975</b> | <b>63,125</b> | <b>70,089</b> | <b>78,072</b> | <b>86,377</b> | <b>97,705</b> |
| Cost of hospital operations and goods sold                 | 23,675        | 29,239        | 32,977        | 36,473        | 39,138        | 43,455        | 48,405        | 53,554        | 60,577        |
| Administrative Expense                                     | 7,224         | 8,969         | 10,549        | 11,257        | 12,436        | 13,808        | 15,380        | 17,016        | 19,248        |
| <b>Total Expense</b>                                       | <b>30,900</b> | <b>38,207</b> | <b>43,526</b> | <b>47,730</b> | <b>51,573</b> | <b>57,263</b> | <b>63,785</b> | <b>70,570</b> | <b>79,825</b> |
| <b>Profit Before Share of Income, Interest &amp; Taxes</b> | <b>6,472</b>  | <b>7,860</b>  | <b>7,881</b>  | <b>9,245</b>  | <b>11,552</b> | <b>12,826</b> | <b>14,287</b> | <b>15,807</b> | <b>17,880</b> |
| Share of income from investments in associated company     | 382           | 968           | 988           | 1,068         | 1,010         | 1,121         | 1,249         | 1,382         | 1,563         |
| <b>EBIT</b>  | <b>6,853</b>  | <b>8,827</b>  | <b>8,869</b>  | <b>10,312</b> | <b>12,562</b> | <b>13,948</b> | <b>15,536</b> | <b>17,189</b> | <b>19,443</b> |
| Finance Expenses   | -770          | -849          | -957          | -972          | -1,345        | -1,342        | -1,284        | -1,236        | -1,216        |
| <b>EBT</b>   | <b>6,083</b>  | <b>7,978</b>  | <b>7,912</b>  | <b>9,340</b>  | <b>11,217</b> | <b>12,605</b> | <b>14,252</b> | <b>15,953</b> | <b>18,227</b> |
| Tax Expenses   | -1,456        | -1,521        | -1,392        | -1,671        | -2,243        | -2,521        | -2,850        | -3,191        | -3,645        |
| <b>Net Income</b>  | <b>4,627</b>  | <b>6,457</b>  | <b>6,520</b>  | <b>7,669</b>  | <b>8,974</b>  | <b>10,084</b> | <b>11,402</b> | <b>12,763</b> | <b>14,582</b> |
| Profit to Equity   | 4,386         | 7,937         | 6,261         | 7,394         | 8,651         | 9,722         | 10,992        | 12,304        | 14,058        |
| Profit to Non-controlling interests of subs                | 241           | 315           | 259           | 276           | 322           | 362           | 410           | 459           | 524           |
| Average number of share                                    | 14,619        | 15,455        | 15,463        | 15,491        | 15,491        | 15,491        | 15,491        | 15,491        | 15,491        |
| <b>EPS (Baht)</b>  | <b>0.30</b>   | <b>0.51</b>   | <b>0.40</b>   | <b>0.48</b>   | <b>0.56</b>   | <b>0.63</b>   | <b>0.71</b>   | <b>0.79</b>   | <b>0.91</b>   |



## Appendix F: Projected Balance Sheet

| <b>Balance Sheet</b><br>(in million)                                 | <b>Y/2011</b> | <b>Y/2012</b> | <b>Y/2013</b> | <b>Y/2014</b> | <b>Y/2015E</b> | <b>Y/2016E</b> | <b>Y/2017E</b> | <b>Y/2018E</b> | <b>Y/2019E</b> |
|--|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|
| <b>Assets</b>  |               |               |               |               |                |                |                |                |                |
| Current assets   |               |               |               |               |                |                |                |                |                |
| Cash and cash equivalents  | 3,876         | 3,590         | 4,061         | 3,594         | 5,838          | 8,133          | 9,429          | 11,386         | 14,159         |
| Short-term investments   | 464           | 268           | 120           | 1,878         | 1,878          | 1,878          | 1,878          | 1,878          | 1,878          |
| Trade and other receivables  | 3,377         | 4,287         | 4,925         | 5,819         | 6,313          | 7,009          | 7,807          | 8,638          | 9,770          |
| Inventories  | 1,038         | 780           | 919           | 1,111         | 1,174          | 1,304          | 1,452          | 1,607          | 1,817          |
| Other current assets & Dividend                                      | 122           | 162           | 204           | 278           | 316            | 350            | 390            | 432            | 489            |
| <b>Total current assets</b>  | <b>8,877</b>  | <b>9,086</b>  | <b>10,229</b> | <b>12,679</b> | <b>15,518</b>  | <b>18,674</b>  | <b>20,956</b>  | <b>23,940</b>  | <b>28,113</b>  |
| Non-current assets   |               |               |               |               |                |                |                |                |                |
| Long-term Investment   | 7,940         | 13,383        | 13,624        | 15,261        | 15,803         | 16,633         | 17,288         | 17,701         | 18,180         |
| Property, Premises and Equipment                                     | 30,131        | 34,008        | 39,738        | 47,065        | 49,559         | 52,662         | 56,474         | 60,963         | 66,413         |
| Other Intangible Asset   | 11,844        | 11,984        | 12,808        | 18,223        | 18,040         | 19,169         | 20,556         | 22,191         | 24,174         |
| <b>Total non-current assets</b>                                      | <b>49,915</b> | <b>59,375</b> | <b>66,170</b> | <b>80,549</b> | <b>83,401</b>  | <b>88,464</b>  | <b>94,318</b>  | <b>100,854</b> | <b>108,767</b> |
| <b>Total assets</b>  | <b>58,792</b> | <b>68,461</b> | <b>76,399</b> | <b>93,228</b> | <b>98,920</b>  | <b>107,138</b> | <b>115,275</b> | <b>124,794</b> | <b>136,879</b> |
| <b>Liabilities and shareholders' equity</b>                          |               |               |               |               |                |                |                |                |                |
| Current liabilities  |               |               |               |               |                |                |                |                |                |
| Trade and other payables   | 3,391         | 3,614         | 4,021         | 4,408         | 4,736          | 5,258          | 5,857          | 6,480          | 7,330          |
| Short-term loans   | 1,194         | 4,207         | 4,072         | 4,232         | 4,025          | 4,469          | 4,978          | 5,508          | 6,230          |
| Other S-T Liabilities  | 2,993         | 3,551         | 3,668         | 4,238         | 4,262          | 4,732          | 5,271          | 5,832          | 6,597          |
| <b>Total current liabilities</b>                                     | <b>7,578</b>  | <b>11,373</b> | <b>11,761</b> | <b>12,879</b> | <b>13,023</b>  | <b>14,460</b>  | <b>16,107</b>  | <b>17,820</b>  | <b>20,157</b>  |
| Non-current liabilities  |               |               |               |               |                |                |                |                |                |
| Long-term Loans from financial institutions - net of current portion | 15,598        | 15,708        | 18,729        | 27,381        | 26,532         | 26,041         | 24,211         | 22,573         | 21,406         |
| Other non-current liabilities  | 2,198         | 2,553         | 3,265         | 4,014         | 4,897          | 5,974          | 7,289          | 8,892          | 10,849         |
| <b>Total non-current liabilities</b>                                 | <b>17,796</b> | <b>18,261</b> | <b>21,994</b> | <b>31,395</b> | <b>31,429</b>  | <b>32,015</b>  | <b>31,500</b>  | <b>31,465</b>  | <b>32,255</b>  |
| <b>Total liabilities</b>   | <b>25,375</b> | <b>29,634</b> | <b>33,755</b> | <b>44,274</b> | <b>44,452</b>  | <b>46,475</b>  | <b>47,607</b>  | <b>49,285</b>  | <b>52,412</b>  |
| <b>Shareholders' equity</b>  |               |               |               |               |                |                |                |                |                |
| Share capital Registered   | 1,545         | 1,545         | 1,549         | 1,549         | 1,549          | 1,549          | 1,549          | 1,549          | 1,549          |
| Share premium  | 20,327        | 20,327        | 20,787        | 20,787        | 20,787         | 20,787         | 20,787         | 20,787         | 20,787         |
| Retained earnings  | 10,122        | 15,423        | 18,345        | 24,444        | 29,958         | 36,153         | 43,158         | 50,999         | 59,957         |
| Non - controlling interests of the subsidiaries                      | 1,422         | 1,532         | 1,963         | 2,174         | 2,174          | 2,174          | 2,174          | 2,174          | 2,174          |
| <b>Total shareholders' equity</b>                                    | <b>33,417</b> | <b>38,827</b> | <b>42,644</b> | <b>48,954</b> | <b>54,468</b>  | <b>60,663</b>  | <b>67,668</b>  | <b>75,509</b>  | <b>84,468</b>  |
| <b>Total liabilities and shareholders' equity</b>                    | <b>58,792</b> | <b>68,461</b> | <b>76,399</b> | <b>93,228</b> | <b>98,920</b>  | <b>107,138</b> | <b>115,275</b> | <b>124,794</b> | <b>136,879</b> |