

Bangkok Dusit Medical Services (BDMS)

Industry: Health care services

Bloomberg: BDMS TB | Reuters: BDMS.BK

Team 09

Valuation as of January 18, 2019

BUY

15.82%
Upside Potential

12M Target
27.33

Last Traded Price: THB 23.60 (18 Jan 2019)
Exchange rate USD/THB: 32.14

Key catalysts: Strong presence in all segments, Persistent growth, Margin expands, Defensive growth stock, Undervaluation, Top pick in the

Key Metrics

OPD visit per day is total number of OPD patients in a day
OPD revenue per day is total OPD revenue in a day
Average Daily Census (ADC) is the total IPD admissions in a day
Average Length of Stay (ALOS) is the average bed day of IPD patients
IPD revenue per IPD day is total IPD revenue per admissions per bed day

Fig. 1: Key Figures

52 Week Price Range (THB/Share)	20.70 - 28.00
30-day average daily turnover (THBmm)	57.052
Share Outstanding (billion shares)	15.67
Public Float (%)	54.73%
Market Capitalization (THBbn)	372.92
Book Value per Share (THB)	4.41
Last-twelve-month P/E	37.11

Source: Thomson Reuters and SET

Fig. 2: FCFF Valuation (THB mm)

PV FCFF	119,533
Terminal Value	330,966
Equity Value	450,499
Outstanding Shares	15,910
Total Debt	25,372
Cash	9,750
Price FCFF Valuation	27.33

Source: Team Analysis

Fig. 3: Key Financials

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E	2023E
Total Revenue (THB mm)	63,841.6	67,903.5	71,932.5	78,584.8	85,501.9	93,222.7	102,044.9	112,152.2	123,505.0
EBIT (THB mm)	14,493.6	14,799.8	15,544.0	18,406.3	19,753.4	21,531.7	23,971.8	26,788.8	29,988.2
EBITDA (THB mm)	11,365.9	11,575.2	14,673.7	14,417.0	19,642.4	16,393.1	18,492.4	20,968.7	23,843.3
Net Income (THB mm)	8,020.7	8,386.5	10,215.7	10,641.0	14,665.3	12,004.9	13,656.1	15,637.8	17,931.2
EPS (THB)	0.52	0.53	0.51	0.68	0.69	0.75	0.86	0.98	1.13
Dividend per Share (THB)	0.32	0.36	0.32	0.41	0.55	0.53	0.60	0.69	0.79
ROA (%)	8%	8%	6%	8%	8%	9%	10%	11%	11%
ROE (%)	15%	14%	12%	14%	13%	13%	14%	15%	16%

Source: Team Estimates. For further information please see Appendix

Investment Summary



We issue a buy recommendation with a target price of THB 27.33, representing 15.82% upside potential from BDMS's closing price of THB 23.60 on January 18, 2019. Our valuation is based on a Free Cash Flow to Firm (FCFF) valuation. Our recommendation is laid on the following key catalysts:

(1) Uniquely positioned to exploit the broadened horizon.

BDMS is the largest hospital group in Thailand with 47 hospitals, spanning all regions. The company caters various customer groups from middle-income to international patients at varying levels of complexity. Insurance penetration, which has been growing at 11.5% over the past 10 years, will benefit BDMS the most as health insurance increase the affordability of private healthcare. Combined with key macro trends over the past 5 years such as aging society, higher prevalence of non-communicable diseases (NCDs), rising income and urbanization, BDMS is well on its way to ramp up its operational efficiencies. Along with strategic partnerships with domestic insurance companies and Ping An Good Doctor ("PAGD") to access China and Southeast Asia medical tourism markets, BDMS has great potential to continue its growth trajectory and further cement its market share over the long run.

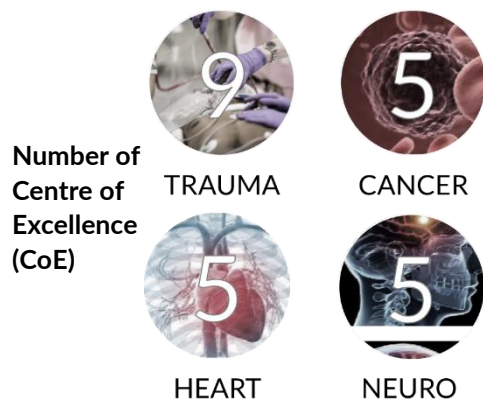
(2) Unparalleled domestic competitiveness.

sustainable. Through its congeneric integration and strong brand, BDMS, unlike other private hospitals, is able to achieve both efficient cost management and revenue synergies within its Hub-and-Spoke network ("HSN"). Patient referral, dynamic resource allocation and strong national coverage allows BDMS to increase its treatment complexity and intensity. This is well supported by BDMS' strong upstream supporting businesses such as medical manufacturing and medical supply chain. Thus, BDMS is well-poised to withstand and grow amid the changing competitive and regulatory landscape.

(3) Undervalued defensive growth stock.

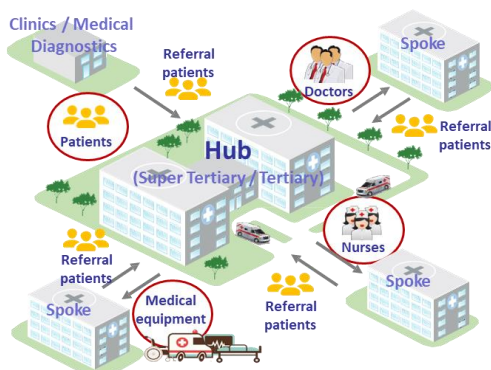
Despite market downturns, BDMS has generally managed to have higher price than both industry peers and SET index. At the same time, the company has managed grow significantly over the years as it accumulated its competitive edge over other hospital groups. While we expect BDMS to post reasonable earnings growth of 2.5% in 2019 amid threat of new regulations, we believe that BDMS' growth beyond 2023 will stabilize as the company matures. Our forecasts are below consensus estimates of 8.8% growth. While consensus expected continued 11.9% revenue growth and margin expansion, we expect decelerating revenue growth and stable margins after 2023. We believe that BDMS has been undervalued by the market by 16.31%.

Fig. 4: BDMS Centre of Excellence



Source: Company data

Fig. 5: Hub-and-Spoke Model



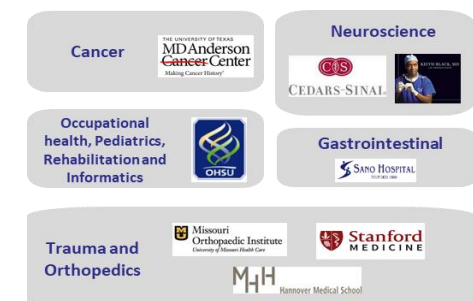
Source: Company data

Fig. 6: Complete Continuum of Healthcare



Source: Company data

Fig. 7: International Partners



Source: Company data

Fig. 8: Healthcare demand vs. supply

	CAGR 13-17
Number of Hospital Beds	0.5%
Number of Doctors	4.5%
OPD Visits	18.4%
IPD Days	25.1%

Source: NESDB, NSO, MOPH and Team analysis

Company profile

Bangkok Dusit Medical Services Public Company Limited ("BDMS") engages in two business segments: hospital operations and other non-hospital medical-related businesses. It owns and operates Thailand's largest private hospital network of ten hospital groups including Bangkok Hospitals, Samitivej Hospitals, Srinakarin Hospitals and the Royal Phnom Penh Hospitals. BDMS' non-hospital medical-related businesses include pharmacy chains, laboratories, pharmaceutical manufacturing, saline production and evacuation services. These supporting businesses contribute about 3.9% of total revenue.

World-class medical services. BDMS prides itself in being able to specialize in a wider range of strategic medical specializations, including trauma, cancer, cardiology and neurology (Fig. 4) than its competitors (Appx. 1). It delivers care at a standard equivalent to advanced OECD member countries at its CoEs. To reaffirm its status and goals for continuous improvement, BDMS has attained accreditation from Joint Commission International (JCI), a group that provides international healthcare accreditation service to hospitals around the world.

BDMS Hospital Hub-and-Spoke model. BDMS has employed a HSN model to enhance its efficiency through the scale of the network. Hub hospitals are either super tertiary ("CoE") or tertiary (hub) hospitals providing complex care. Spoke hospitals are primary or secondary hospitals providing preliminary care. When patients require complex care that spoke hospitals cannot deliver, they are referred to hub hospitals. When spoke may temporarily require additional resources, medical professionals and equipment are able to be shared within the group. Referring patients and sharing key resources creates unique cost and revenue synergy. (Fig. 5)

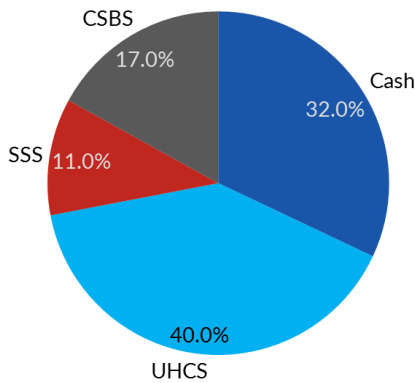
Complete Continuum of Healthcare. BDMS can cater to various patient groups and their need of care through its large network and diverse mix of hospitals. In addition to curative care, holistic healthcare services are also offered. Reacting to growing consumer health awareness, the BDMS Wellness Clinic was founded to provide a wide variety of preventative care, targeting high net worth individuals and medical tourists. Personalized health optimization with medical experts and advanced technologies have been the key emphasis of the clinic, resulting in higher margin. Further down the spectrum, Chiva Transitional Care Hospital is the company's first foray into rehabilitative care. Rehabilitative care centers not only allow patients to reduce the cost of stay, but also free up BDMS' hospital capacity utilization. Since most inpatient (IPD) revenue are derived in the first two days of hospitalization, this would allow BDMS to maximize its revenue. To support its core hospital business, BDMS engages in medical manufacturing and supply chain upstream and medicine retail downstream. Upstream businesses reduce double marginalization and provide additional revenue streams. Retailing through Save Drug stores creates retail channels BDMS products, increasing procurement and economies of scale as well as over-the-counter drug (OTC) retail opportunities (Fig. 6).

Company Strategy

Three strategic pillars: BDMS strategic goal is to increase its operational efficiency by focusing on core strategies:

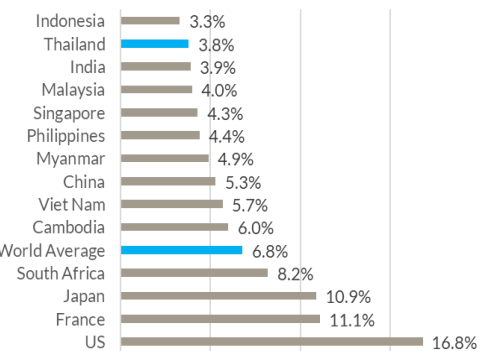
- 1. Continuous service quality improvement** - BDMS is well positioned to increase care complexity. Maintaining and acquiring new technologies has long partnered with leading domestic and international medical institutions with key medical specializations (Fig. 7). Strategic collaborations include training, knowledge sharing, clinical simulation, patient referral and research to access new knowledge. Active talent acquisition and retention supports the strategy. Attractive remunerations (higher than comparable hospitals) are the key to attracting and retaining talents.
- 2. Focusing on complex, high intensity treatments** - To maximize earnings, BDMS focuses on providing specialized treatments in orthopedics, trauma, brain and nervous system, heart, and cancer which yields higher margins. Most BDMS CoEs specialize in trauma due to a leading role in accident-related to capture hospitalization. Thailand has one of the world's highest road accident rates. With both aging society and growing NCDs requires an increasingly complex care, BDMS will be able to fully cater the market demand. At the same time, with growing health awareness, the company created BDMS Wellness Clinic ("BWC") to provide personalized medical service based preventative and wellness care.
- 3. Targeting strategic customer groups** - BDMS strategically targets key growing segments such as insurance, Chinese medical tourists and under targeted sectors (i.e. child care and upcountry customers.) Such strategy would complement the company's effort to increase hospital utilization rate. Moreover, the wellness and rehabilitation centers help free up the capacity so that space can be used to cater for complex care to maximize the company's revenue.

Fig. 9: Thai Healthcare Expenditure Breakdown



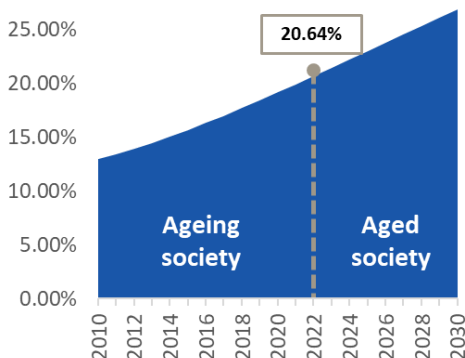
Source: SSO, NHSO, WHO, BOT and Team Analysis

Fig. 10: 2016 Health Expenditure as % of GDP



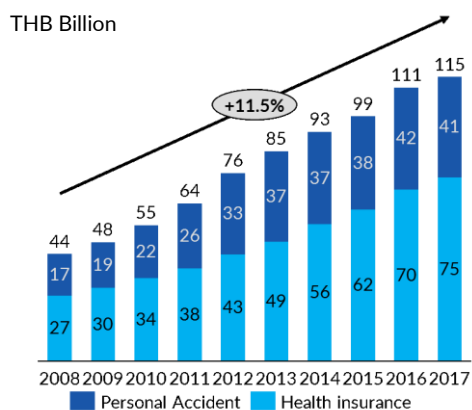
Source: World Health Organization (WHO)

Fig. 11: Thailand is aging



Source: Euromonitor International

Fig. 12: Selected Insurance Direct Premium



Source: OIC

Industry Overview

Private hospital industry in Thailand has grown substantially with a compound annual growth rate (CAGR) of 20.2% from 2012 to 2016. The industry value added to the Thai economy was THB 99.4 billionⁱ in 2016. 71% of Thai hospitals are publicⁱ but are mostly geared towards the low income segment of the population, catering for the Universal Healthcare Coverage Scheme (UHCS), Civil Servant Benefit Scheme (CSBS) and Social Security Scheme (SSS) (Fig. 9). Public hospital availability is constrained by lack of funds and shortage of medical professionals (Fig. 8). Such constraints lead to long waiting times and overcrowding. Public hospitals' inability to patients' demand enhances the need for private hospitals. Private hospitals, despite being more expensive, appeal particularly to middle and high-income Thais willing to pay a premium for quicker and higher quality service. Due to high barriers to entry, there are 347 private hospitals in Thailand as of 2017. Reputation, economies of scale and scope and limited medical personnel are significant entry barriers.

1. Drivers and trends

[A] Increase Healthcare expenditure

Healthcare expenditure in Thailand is relatively low when compared to other countries at a similar level of development, indicating that there is room for growth (Fig. 10). The Thai healthcare sector is expected to expand due to the following trends:

[A1] Aging population. In 2022, Thailand is forecasted to become an aged society in 2022, when more than 20% of the total Thai population would be at least 60 years oldⁱ. A steadily aging domestic population results in significantly greater demand for modern, high-tech medical services for both preventative care and medical treatment. Spending on healthcare for the elderly is estimated to rise from THB 63bn in 2010 (2.1% of GDP) to THB 228bn in 2022 (2.8% of GDP)ⁱⁱ.

[A2] Insurance penetration. Few Thai people have voluntary private health insurance, leaving much room for growth. The market is gaining popularity as financial literacy is improving and health insurance packages are becoming more affordable. The tax deduction benefits from health insurance also boost subscriptions. Value of private health insurance and private accident direct premium expanded with a CAGR of 11.5% (Fig. 12) indicating a large increase in voluntary insurance subscriptions.ⁱⁱⁱ As subscribers grow, their out of pocket burden lowers which will benefit hospitals.

[A3] Higher prevalence of NCDs and trauma. Contradicting to Sustainable Development Goals, the ratio of deaths from traffic accidents and NCDs are rising in Thailand. (Fig.13) In 2017, 71% of deaths in Thailand were because of NCDs. Thais tend to increase this risk by engaging in harmful behaviors such as excessive alcohol consumption (Thais consumed 6.9 liters of alcohol per person while the world average is 6.3 liters), smoking (smoking prevalence among adult Thai males is 41.4%) and unsafe road behaviors (ninth highest road fatality rate in the world)^{iv}. Moving forward, these trends will necessitate increasingly complex medical treatments, generate significant revenue to hospitals.

[A4] Increase in health consciousness. The global wellness economy is valued at \$4.2tn in 2017 and is expected to grow at a pace of 6.5% annually until the year 2022^v. Surveys showed that the proportion of Thais that partake in health promotion activities increased from 5.3% in 2003 to 12.3% in 2014.^{vi} Moreover, sales growth of consumer health products in the country continually outpaces that of other fast-moving consumer goods.^{vii} Improved education, rising incomes and increasingly hectic lifestyles, coupled with increasing deaths from non-infectious chronic diseases lead Thais to be more concerned of health issues. Some key services demanded by health-conscious consumers include medical check-ups, cosmetic treatment services and healthy and organic goods.

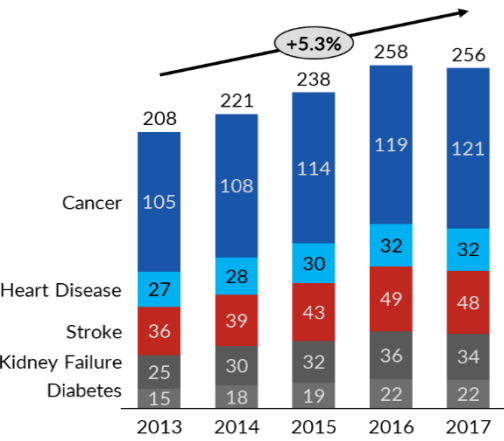
[A5] Rising domestic income level. Despite weak global economic outlook, Thailand's national income is expected to increase moderately partly because the country is still in the middle income country level. Thailand's GDP per capita tripled from US\$2,200 in 1993 to US\$6,600 in 2017 and is expected to exceed US\$8,900 by 2022^{viii}. Economic growth will lead to increase in demand for healthcare services, especially in the middle income segment. The segment's proportion of the population should increase from 36% in 2015 to 41% in 2020^x. This present opportunities for mid-tier hospitals.

[A6] Urbanization. More Thais are moving from rural areas to urban regions in search of better economic opportunities. Thailand urbanization rate is expected to rise from 49.2% in 2017 to 56.4% in 2027^x. Public investment in infrastructure will speed urbanization in regional centers. Population clustering makes it more viable for hospitals to have regional operations as there will be higher population-density. Previously, small cities which would only consist of public hospitals.

[B] Medical tourism

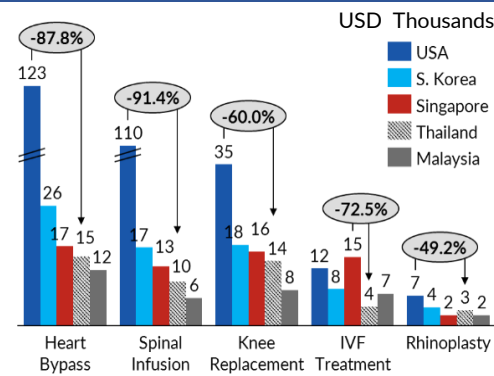
Thailand is a well-known destination for medical tourism. Foreign patients contribute to the industry in volume and price intensity. They tend to demand more complex care given that they factor in transportation costs to commute to Thailand. In addition, foreigners also come to Thailand for wellness treatments such as spa and anti-aging which Thai service providers can charge a high margin. Thai government has policies to promote Thailand to be a global medical hub as part of Thailand 4.0 development plan. Aside from grating Middle Eastern countries' citizens with 90-day Medical Visas, the government also made the Medical Visa

Fig. 13: Selected NCD death per 100,000 population in Thailand



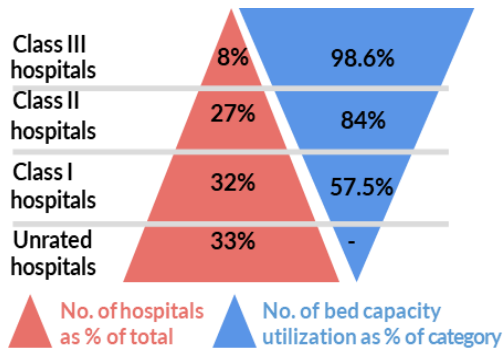
Source: NESDC

Fig. 14: Comparison of medical prices



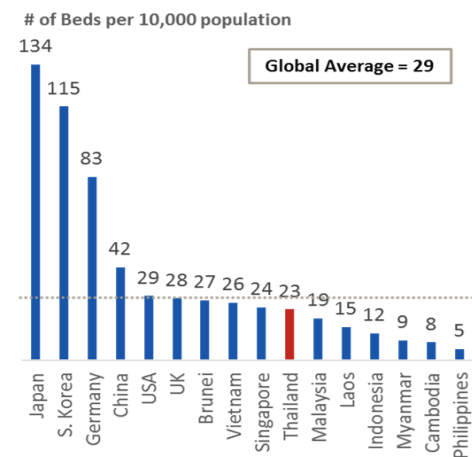
Source: Medicaltourism.com 2019

Fig. 15: Quality medical services is scarce and unevenly distributed in China



Source: Frost & Sullivan and China National Health and Wellness Commission

Fig. 16: Beds to population in each country



Source: World Health Organization

available to CLMV and Chinese nationals in 2017. Thailand medical tourism industry is ranked 6th in the world^{xi} with an estimated 2.5 million medical tourists in 2018^{xii}. Further increase medical tourists should be driven by:

[B1] Excellent value for money: Thai private hospitals are able to provide high quality treatments at relatively low prices. Thailand has 46 JCI accredited hospitals, the third highest number in the world^{xiii}. Despite high quality of facilities and services, treatment prices in Thailand is many times lower than most developed countries with cost savings of over 80% (Fig. 15). In addition, patients are able to access healthcare services immediately, whereas they may face long-waiting queues in their home countries. At the same time, patients are able to explore Thailand's rich culture and various attractive tourist destinations including sandy beaches, tropical forests and ancient temples which enhances the overall perceived value.

[B2] Limited health infrastructure in neighboring economies

Of 60 countries, Thailand's healthcare system is ranked 15th while China, Cambodia and Vietnam are ranked 33rd, 43rd and 59th respectively^{xiv}.

- **China.** With rising middle class, Chinese patient group is an attractive segment for Thai hospitals. In 2017, tertiary hospital bed use rate in China was at 98.6% due to limited capacity.^{xv} As a result, affluent patients resorted to travelling to Japan, Korea and the US for care^{xvi}. Although there is also no waiting time required to get treatments at Thai private hospitals, only a limited number Chinese patients are turning to Thailand to receive treatments due to a perceptual gap in quality of care compared to advanced economies. Nonetheless, past trends shows promising signs for the industry. For example, the number of birth related clinics were limited in China, resulting in a large number of Chinese patients coming to Thailand for fertility treatments such as IVF.

- **Cambodia, Laos, Myanmar and Vietnam (CLMV).** The GDPs of CLMV countries are expected to grow at a pace of over 6% per year between 2018 and 2022^{xvii}, resulting in more wealthy individuals. With healthcare infrastructure still underdeveloped, Thai hospitals are proving to be an attractive destination for affluent CLMV citizens. In addition to quality, another main pull factor for CLMV countries is proximity.

2. Pricing power

Despite the fast-growing demand drivers, supply of healthcare is limited. Particularly, public hospitals have not received enough government funding. Increase in level of demand for healthcare significantly exceeded that of supply. (Fig. 8) Hence, there is a mismatch in the sector and this, coupled with high barriers to entry, means private hospitals have some degree of monopoly to charge markups. While price regulation remains a risk, we believe this risk would not substantiate.

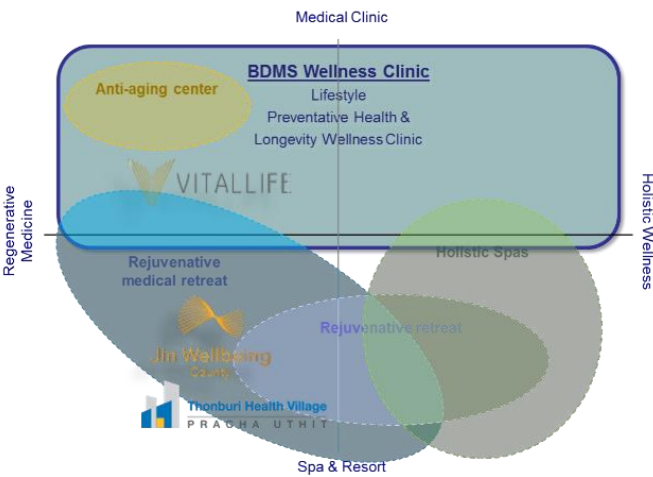
Competitive Positioning

While the private hospital industry environment is accommodative to current firms with strong barriers to entry and little substitutes, BDMS leads the pack through its complete continuum of healthcare, HSN business model and strategic partnerships. This allows the company to capture customers at all price point, care complexity and medical needs. Given its brand, scale and expertise, the company should be able to maintain its competitive advantage in the long term.

BDMS is horizontally and vertically well-integrated and possess long-lasting strategic relations with channel stakeholders. BDMS largely benefits from its large hospital network and strategic investments in medical supply chain and manufacturing, compared to other hospitals which only focus solely on hospital care. This enables BDMS to derive significant cost synergies while upholding its service quality in two folds. Firstly, the company can have large procurement synergies for generic drugs and saline which it manufactures itself. Secondly, it share fixed costs such as resources equipment between hub and spoke hospitals. Currently, most of BDMS' revenue originates from self-paying customers (56%). However, the company expects to increase the portion of insurance and corporate contract patients in the future. Given the company's size, the power of insurance companies and large corporate customers to push down prices is unlikely to substantially increase overtime. Therefore, we believe buyer power is moderately low because BDMS's customer base is currently rather fragmented. Meanwhile, manufacturers of imported drugs and medical professionals such as doctors still hold significant supplier power over the company as they directly relate to the company's service quality.

Competition in wellness care. BDMS realized that there was a gap in the regenerative treatment while there has been growing health awareness and focus on well-being. Despite an increase in the competition, the inferior facilities, inaccessible location and limited traditional products and services being offered by the top competitors(Vital life by BH, and Jin wellbeing by THG) leave room for BDMS to exploit. BWC provide clinically proven medical treatments, which spans from regenerative medicine to holistic wellness treatments, (Fig. 17), offers an unique business model ranging from blood test to vitamin supplement and from fitness center to spa treatments. Unlike its competitors, BWC can provide extensive care and personalized services through its sophisticated medical devices

Fig. 17: Positioning of Wellness Clinics



Source: Company data and Team Analysis

and exclusive medical team. By importing high technology medical devices, the company ensures that the quality of care will be comparable to that of the top international peers. Assigning small groups of patients to a medical team and assigning relationship manager increase effectiveness of care and enable BWC to provide personalized treatment plan tailored to each patient based on his/her unique needs. In addition, BWC's strategic location in the heart of Bangkok provide accessibility and convenience that its competitors cannot offer.

Since the initiation of BWC in 2016, we believe BDMS is now ready to reap the benefits in this high potential segment and poised to be one of the top destinations in Asia due to its world-class quality, personalized care, strategic location and clear value proposition. Patients will be provided with complete set of services that will improve their wellbeing as well as enhance their longevity.

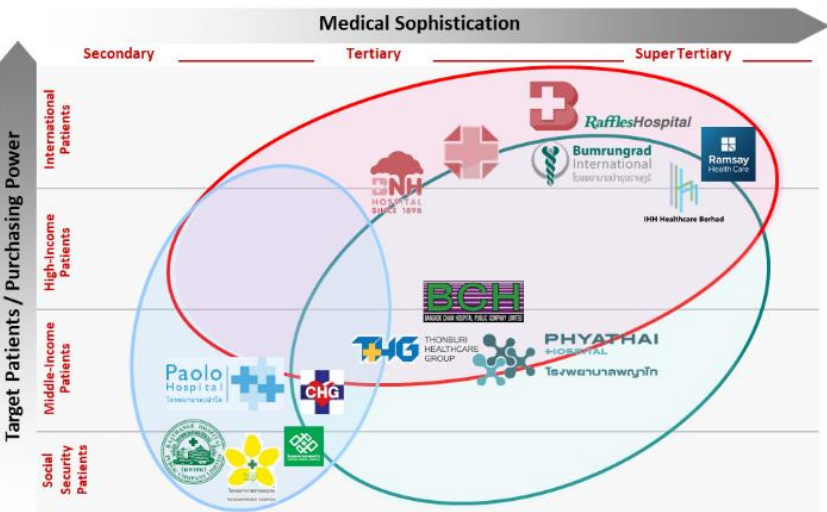
Diversified source of patient revenue. BDMS partnered with three insurance companies (Muangthai Life Assurance, Allianz Ayutthaya and Viriya insurance) to target different income groups. Although the insurance plans provide different coverage levels, all of them channel patients to exclusively come to BDMS for most of their care. At the same time the company plans to capture more international patients, especially from China. The MoU with PAGD, China's largest online healthcare platform, means that patient consultations as well as communications about service offered and medical tourist packages will be facilitated. This immensely increases BDMS' reach to potential consumers in China. Recently, PAGD has

partnered with Grab, the largest ride hailing application in Southeast Asia (SEA). We see a potential for BDMS to escalate its partnership with PAGD to SEA once the market is more mature, such move from BDMS would complement its strong position to be the choice for medical tourists. Strategically located in an accessible regional hub, BDMS provides a wide range of sophisticated care at competitive prices leading to a competitive advantage over its competitors.

Limited shift in market landscape. Existing competitors include Bangkok Chain Hospital (BCH), Bumrungrad International Hospital (BH), Chularat Hospital (CHG), Ladprao General Hospital (LPH), Rajthanee Hospital (RJH), Ratchaphruek Hospital (RPH), Thonburi Healthcare Group (THG) and Vibhavadu Hospital (VIBHA). All are unlikely to heavily invest in further expansion soon given their need to reap benefits from previous investments so are unlikely to invest in capacity expansion anytime soon. The threat of new entrants are also expected to be limited low given the high barrier to entry nature of the industry. At the same time, the threat of foreign medical tourists may shift towards other competing mid-tier hospitals such as BCH, and CHG who provide care at a more affordable price point because BDMS has a diverse hospital portfolio at various price points, location and reputation.

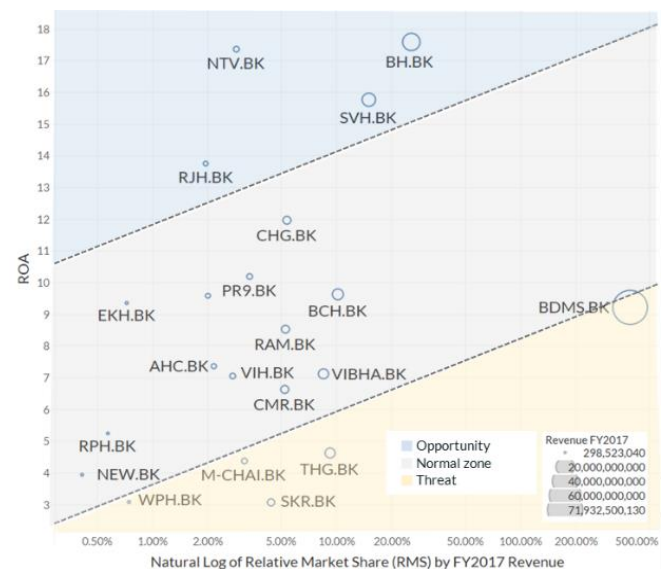
Higher relative market share means opportunity, despite lower return on assets (ROA). BDMS has underperformed in terms of creating returns from its investments, but enjoy a 47.6% market share in terms of revenue among listed domestic peers. As of fiscal year 2017, BDMS is 3.9 times larger than its closest competitor. Thus, its ROA should improve once the company ramps up capacity utilization. This is highly likely to occur given the company's market share, network and reputation the company has created. BDMS has raised the bar for existing competitors and new entrants through its extensive vertical and horizontal investments. According to Herfindahl-Hirschman Index, the private healthcare sector in Thailand is highly concentrated with a score of 2557. Previously, BDMS expanded with aggressive mergers and acquisitions (M&A), resulting in its market share consolidation. BH, RAM, BCH and VIBHA are the closest competitors in terms of market share. RAM, BCH and VIBHA generally cater to domestic customers while BH caters more to medical tourists. BDMS' five closest competitors, with a combined market share of approximately 27.89%, all have a higher return on assets. These 5 biggest competitors have a combined market share of approximately 27.89%.

Fig. 18: Positioning Matrix



Source: Company data; Team Analysis

Fig. 19: ROA vs RMS



Source: Thomson Reuters; Team Analysis

Fig. 20: Gross Profit Trend

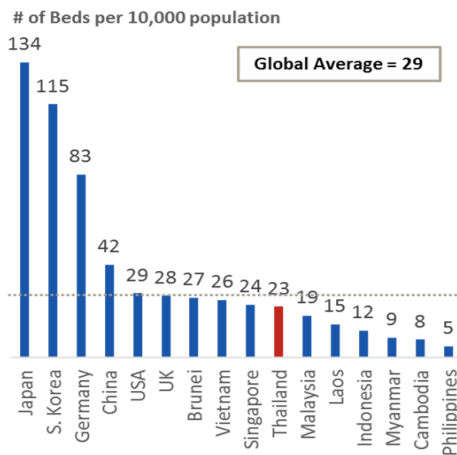
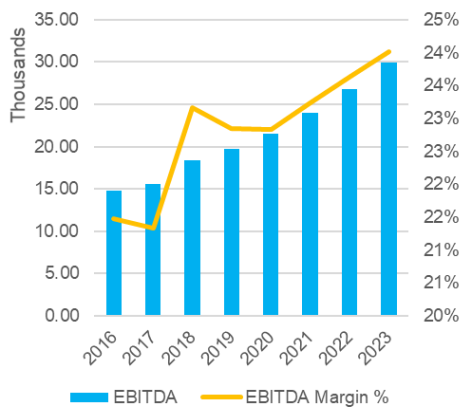
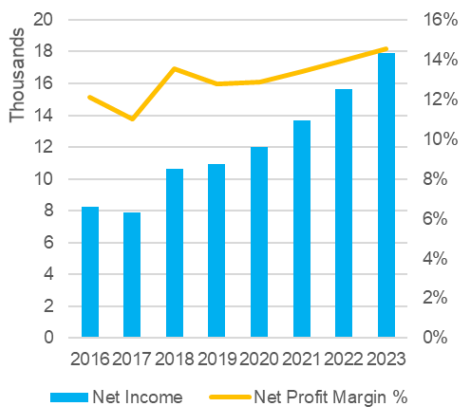


Fig. 21: EBITDA Trend



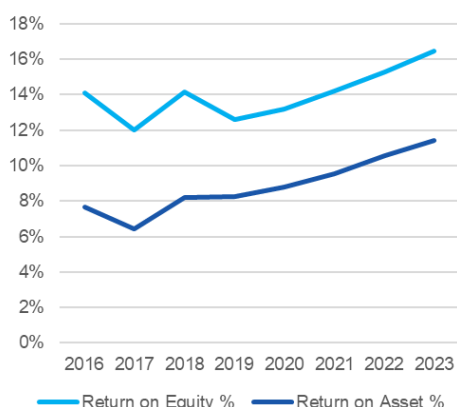
Source: Bloomberg and Team Analysis

Fig. 22: Net Income Trend



Source: Bloomberg and Team Analysis

Fig. 23: ROA and ROE



Source: Bloomberg and Team Analysis

Financial Analysis

Revenue Growth

Between 2016 and 2017, BDMS generated an impressive revenue growth of 5.9%. The company experienced increase in its patient revenue growth of 10% YoY during 9M18 due to higher price intensity, higher average daily census and more OPD visits. Over the next 5 years, we believe that the revenue will remain strong with 10-year CAGR of 8.1% driven by its price and volume:

Volume

Patients visits to BDMS re expected to grow at a much faster pace after vast investments to increase total capacity mainly driven by more elderlies, more private health insurance penetration and new waves of international patients.

Despite innovations leading to shorter Average Length of Stay (ALOS), we still expect Average Daily Consensus (ADC) to increase in the future driving up IPD volume due to: (1) The complications resulted from critical chronic illness and trauma which generally require high length of stay, (2) More Thais are subscribed to health insurance and can now afford more treatments. In terms OPD, OPD visits will increase as Thais become more concerned about their health and increase demand for preventive care and wellness treatments.

Meanwhile, increase in medical tourists will also increase ADC as international patients tend to come to BDMS for complex treatments which requires admission. Despite the declining in patients from the middle east, we expect the new wave to come from CLMV countries and China. Given the low-base of these customers and underdeveloped system patients in those countries, there is significant rooms to grow. We expect that the domestic and international Average Daily Census will expand at 5-year CAGR of 4.7% and 5.8%, respectively.

As Thailand is becoming an aged country, senior citizens would demand more checkups and follow-ups as well as more preventive cares. In addition, BDMS's International patients also contribute to increase in number of OPD visits. We foresee that the domestic and international OPD visits will grow at CAGR of 2.7%, and 6.5%, respectively.

Price intensity

Rising price of healthcare services has been the main drive to increase the revenue, as BDMS is able to carry out mid-single digit kind of price hikes. Despite the threat of price ceiling, we believe that price intensity can still rise further due to the fast-growing demand and the shortage of supply:

i) Demographic trends suggests that NCDs and trauma will increase in the future.

Meanwhile, medical tourists have high transportation costs so they will tend to demand more complex care and have higher propensity to spend on medical treatments. These two factors combined mean more demand for complex care leading to higher value added. The demanded treatments are sophisticated, to be carried out by highly skilled doctors. The BDMS CoE are ready to deliver specialized treatments, adding price intensity to its revenue

ii) High barriers to entry and supply shortage of medical services in the market give some degree of monopoly power to the existing service providers to put markup on prices.

iii) BDMS can charge a premium for wellness treatment and preventive care. At its Wellness clinic, patients highly value their personal wellbeing and illness prevention. In addition, CoEs' standard are on par with leading hospitals in developed countries, further driving price intensity as customers put trust in the company's quality of services.

In our base scenario, we believe that price ceiling on medical services, supplies, and medicine will not materialize. If price regulation were to occur, recommendations would be revised accordingly (Appx. 16)

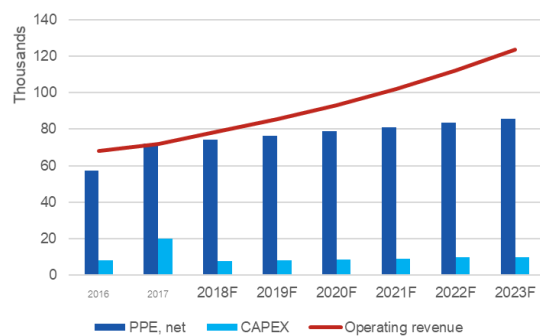
MEDICAL COSTS

Given a fully integrated supply chain, central procurement system and bargaining power with suppliers and medical professionals, economies and resource-sharing benefits ensure that most operating costs will be well-controlled. Costs should grow at a pace lower than that of the operating revenue with the 10-year CAGR of 7.8%.

Medical supply and medicine: BDMS has its own saline and pharmaceutical manufacturing companies (A.N.B Laboratories and Medicpharma) as well as medical laboratories (N Health). This enables able the company to control the costs of medical supplies and generic drugs, internally sourced for the group. The prices of generic of generic drugs not produced in-house are market determined. BDMS may bargain and achieve economies of scale through its extensive hospital network. By conducting procurement as a group, this central procurement system provides costs saving benefits to BDMS for medical supplies and several specialized drugs.

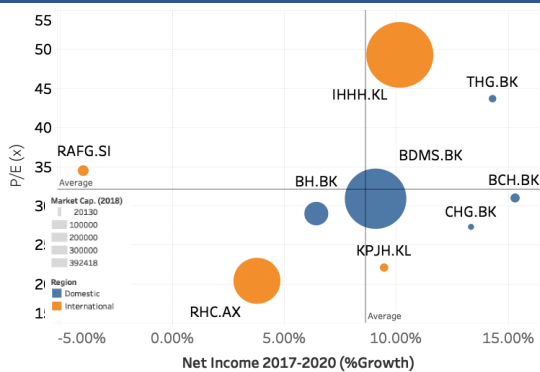
Doctors, nurses, and other medical staff: Shortage of quality medical professionals are a critical scale-up challenge as demand for medical services have consistently grown faster than the level of supply. At tertiary care hospitals, doctors, nurses and paramedics are the key enablers of the

Fig. 24: P/E vs. Net Income Growth



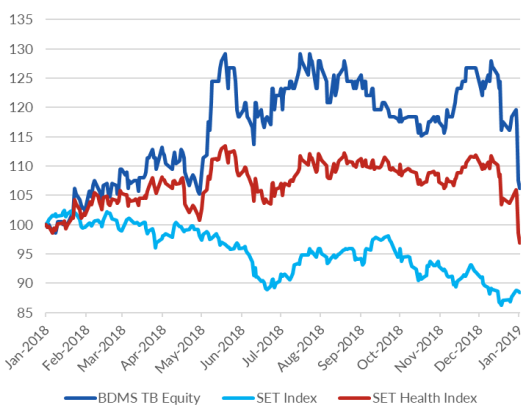
Source: Team Analysis

Fig. 25: P/E vs. Net Income Growth



Source: Bloomberg and Team Analysis

Fig. 26: BDMS Equity Performance



Source: Bloomberg

success and retention of key personnel is imperative. DMS has not encountered issues with recruitment, since it offers attractive compensation package to competent medical personnel. Qualified doctors, nurses, and medical staffs enable BDMS to provide high value-added services and generate higher marginal benefits than HSN marginal costs.

Capital expenditure

BDMS previously embarked on heavy capex cycles to capture excess market demand and maintain its position as the largest hospital chain in Thailand. Moving forward, the company plan to capture the high potential service segments including preventive care and trauma. These may be attained within the current operating model with facilities upgrade for excess hospital capacity. The capex cycle has peaked and new expansion should not require significant further investment. Property, plant and equipment (PPE) should increase in line with income top margin depreciation. This level of capex should suit the operating rhythm.

EBITDA Margin

As volume increases, BDMS' medical supply, professional, and service costs are well-controlled. Operating efficiency can be achieved as EBITDA margin expands. With major expansionary projects completed, its EBITDA margin will enlarge due to lack of new headline costs and more procurement synergy. In 2020F, EBITDA margin should be 22.8% with continue growth in line with heightened capacity use in the future.

Earnings

BDMS should be able to record sustainable earnings growth in the future from increased in capacity utilization due to its wide healthcare network, justified depreciation, ability to take high complexity cases and ability to offer affordable prices to high quality of services when compared to developed countries. In addition, higher profitability of mid-tier hospitals in suburban regions and the break-even of recently-opened hospitals will also contribute to the growth, as those previously loss-making hospitals are now able to grow in profits from their reputation and competitive positioning. In 2018F, we foresee a strong earnings of 10,641 (THB mm) with 34.5% YoY growth on the back of robust cash patients, more insurance patients, and increase in price intensity. Furthermore, we predict that BDMS earnings per share (EPS) to remain solid and to grow at 13.5% in 2018, 12.8% and 12.6% in 2019-20F, despite the potential dilution effect from the convertible bond, which we projected to have minor impact of 1.4% on our EPS. Plus, we anticipate that key financial ratios from 2019F onward and also remains strong in line with the earnings.

Cash generation

BDMS' cash generation has been increasing persistently as a result of strong operating cashflow from its hospital operations after its earlier expansionary plans required sizable amount of CAPEX and financing activities. In our view, the company cash generation will be even more favorable as the company is now entering the stage of reaping benefits after the heavily CAPEX era. The cash inflow from financing and investing will be growing at slower rates, along with its operational tailwind from solid working capital management with 3-year average Cash Conversion Cycle of 14.7 days (4.4 days lower than its peers). The robust cash position ensure the company financial flexibility and prove BDMS to be a bulky "Cash cow" .

Valuation

Our 12-month target price for Bangkok Dusit Medical Services arrives at THB 27.33 per share based on Discounted Cash Flow (DCF) methodology. Given the company's target Debt/Equity ratio, we apply the Free Cash Flow to Firm (FCFF) approach. Since FCFF model allow us to incorporate more specific information, which are supplemented by the company, it allow us to have an comprehensive and effective reflection of the company's future prospects and fundamentals.

WACC

Estimating the risk-adjusted discount rate

COST OF DEBT is calculated using the 10-year Thai Government bond rate with AA- TRIS corporate bond spread

TAX RATE is based on Thailand's corporate income tax rate of 20%

COST OF EQUITY is calculated based on the Capital Asset Pricing Model (CAPM). The 10-year Thai Government bond rate of 2.50% was used as risk-free rate and the average 10-year SET return of 12.0% was used as the market risk. Given that the company planned to reduce its debt overtime, we determined BDMS's beta by using moving-beta computed from the industry average of Thailand's top tier hospitals. We levered Bloomberg's unlevered 3-year beta back accounting for the company's debt to equity ratio. The market risk premium is anticipated at 9.50%, which lead to a cost of equity of 9.26% in 2019 and gradually decrease to 8.53% in 2028. Correspondingly, this resulted in a moving weighted average cost of capital (WACC) of around 7.98% throughout our valuation from 2019 to 2028 .

TERMINAL GROWTH VALUE our stable growth rate is projected to be 3.0% based on the long-term nominal GDP growth of Thailand.

Relative valuation

To ensure that our valuation is relevant and comparable to industry peers, we used P/E multiple as the most appropriate multiple to compare BDMS to its domestic and international peers. EV/EBITDA would reflect the current price resulting from the company's current EBITDA but the company planned to fully ramp up capacity in the three years which will enhance the margin. With P/E multiple, it captures some market expectation from the company future plans which BDMS can be easily compared among industry peers.

For our peer group composition, we chose peers from private hospital sector both domestically and internationally, selecting a set of comparable companies based on similarity in business operations and market capitalization (Fig. 27) Our domestic peers are selected from the top tier healthcare service providers in Thailand and our international peers are selected from the main healthcare service providers in Southeast Asia and Australia.

Fig. 27: Relative Valuation

Company	Market Cap THB bn	EV/EBITDA		P/E		P/BV Latest	Net Income 17-20
		2018E	2019E	2018E	2019E		
Domestic Hospital							
BANGKOK DUSIT MED SERVICE	358,819	22.2x	20.2x	34.9x	31.0x	5.0x	9.1%
BUMRUNGRAD HOSPITAL PCL	129,353	20.0x	18.7x	30.9x	29.0x	7.3x	6.4%
VIBHAVADI MEDICAL CENTER PCL	26,663	n.a.	n.a.	n.a.	n.a.	2.8x	10.4%
BANGKOK CHAIN HOSPITAL PCL	39,401	19.2x	17.1x	35.8x	31.0x	6.5x	15.3%
CHULARAT HOSPITAL PCL	20,130	19.0x	17.3x	29.9x	27.3x	5.5x	13.3%
THONBURI HEALTHCARE GROUP PC	29,281	33.1x	24.2x	66.6x	43.7x	3.3x	14.3%
International Hospital							
IHH HEALTHCARE BHD	392,418	20.3x	17.5x	63.3x	49.3x	2.0x	10.2%
RAFFLES MEDICAL GROUP LTD	49,261	21.1x	21.0x	31.1x	34.5x	2.7x	-4.0%
RAMSAY HEALTH CARE LTD	269,455	12.4x	10.1x	27.6x	20.4x	4.5x	3.8%
KPJ HEALTHCARE BERHAD	34,087	13.7x	12.0x	24.4x	22.1x	2.2x	9.5%
Mean		19.8x	17.2x	38.7x	32.2x	4.1x	

Source: Bloomberg

Risk to the target price

Monte Carlo Simulation & Sensitivity analysis

Our growth and key driver assumptions may not hold given the precarious global economic condition which may continue into 2019 and other unexpected events that represent uncertainties. By adjusting our valuation assumptions, we can see how our target price and BUY recommendation can be affected. We have performed both Monte Carlo analysis to simulate the impact of changes in key modeling assumptions and sensitivity analysis to evaluate the impact of changes in WACC and terminal growth on target price.

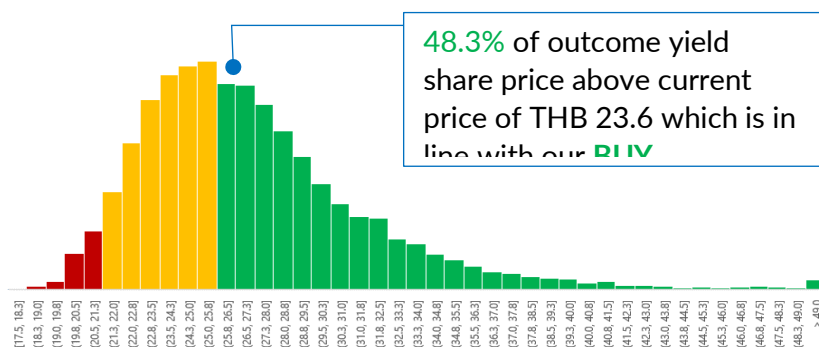
Monte Carlo Simulation

For Monte Carlo analysis, 10,000 simulations were run to demonstrate the impact of the changes in our key revenue assumptions (across different combinations) with corresponding WACC on the target price, we observed 48.4% probability of finding the target price (THB 26.00 per share) and only 4.8% of the probability of a downgrade to sell (Fig. 28)

Sensitivity Analysis

Our sensitivity analysis illustrates the impact of changes in WACC and terminal growth with margin of 1.0% and 0.5% respectively on our target price and our Equity value (Fig. 29)

Fig. 28: Monte Carlo Analysis



Source: Team Analysis

Fig. 29: Share price sensitivity

	2.5%	3.0%	3.50%
27.3			
7.0%	31.4	34.6	38.6
8.0%	25.4	27.3	29.6
9.0%	21.4	22.6	24.1

Source: Team Analysis

Corporate Governance

Group Structure. BDMS, is based in Bangkok, Thailand. The company consists of Bangkok Dusit Medical Services PLC (holding company), 47 hospitals including 2 hospitals abroad (in Cambodia) and 26 supporting businesses. Examples of these subsidiaries includes 9 CoE hospitals, 3 medicine and medical supplies manufacturer and one pharmacy chain.

Corporate management. BDMS's board of directors composed of 11 non-executive management members and 2 executive management members. About half of the board have education and expertise in medicine, while the other half of the board consisted of members with legal, management and finance expertise. The company has five-sub committees: the Audit Committee, the Nomination Remuneration Committee, the Executive Committee, the Risk Management Committee and the Corporate Governance Committee. BDMS's Group Executive Management consists of current Group CEO & President (Mr. Prasert Prasarttong-Osoth, M.D.), Chief of Doctors (Mr. Trin Charumilind, M.D.) and Chief Financial Officer (Mrs. Narumol Noi-am). Newly appointed members as of January 15, 2018 includes Chief Operating Officer (Miss Poramaporn Prasarttong-Osoth M.D.) and Chief Administrative Officer (Mr. Sripop Sarasas). After Mr. Prasert and Mrs. Narumol are charged by the Securities Exchange Commission, they both likely have to step down from their positions. Nonetheless, the company's current Board of Directors are senior and have immense experience. Most members of the board are above 60 years old and have many years of experience behind them. Also, they held various high positions at other top companies such as Siam Commercial Bank, which signal their ability and trust that the other companies placed in them. Given this, along with the company's sound fundamentals, we do not believe the aforementioned change in Board of Director positions will negatively impact the company's operations.

Corporate responsibility. BDMS seems to have made efforts to integrate corporate responsibility into its into its business, thereby creating corporate shared value. Within its operational process, BDMS had initiated 2 programs, 'Check Us' and 'Stop the Line', to create a culture of safety within the company. 'Check Us' encourage patients to demand explanation for the care being given when in doubt while 'Stop the Line' stimulate the creating a new open culture among the workforce which is able to openly discuss about error and safety issues. The combination of both programs enhances the patient care quality and satisfaction while minimizing the risk of litigation for the company. Outside its day-to-day operations, BDMS also engages in a number of CSR activities such as community development.

Shareholder base. As of January 2, 2019, BDMS has 15,668,956,048 shares outstanding. BDMS has a dividend policy of paying dividend at no less than 50% of net profit. The company does not have any preferred stock. All shares have a 1:1 voting right. Currently, Mr. Prasert Prasarttong-Osoth, M.D. (Group CEO & President) is the biggest shareholder of BDMS, with 18.73% consolidated shareholding. Overall, strategic entities constitutes 45.28%, institutional investors 13.98% and other investors represent 40.74%. Generally, there has been low share turnover.

Investment Risks

Political, Regulatory and Legal Risks

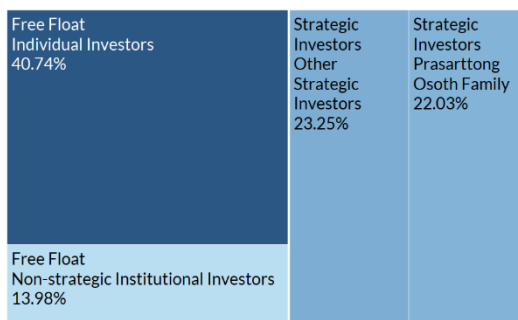
[PRL-1] Price Controls on Drugs, Medical Supplies and Medical services Discussions about price ceiling is causing uncertainty but we believe this risk is unlikely to materialize. Firstly, it is unclear whether Ministry of Commerce (MoC) has the authority to regulate medical and service fees under the current law as private hospitals are regulated by Ministry of Public Health under the Health Facility Act. Moreover, if price ceiling were to be enforced, it would hinder the industry development, conflicting with the government's plan to push Thailand to be a world medical hub as part of the new S-curve industries. In the worst-case scenario, BDMS can mitigate from this risk by increasing operational efficiency. This can be achieved by ramping up its capacity utilization, focusing on domestic insurance penetration and international patient group. We believe prices charged to foreign patients is least likely to be regulated as healthcare prices in Thailand is remain

relatively inexpensive. With expanding CoEs, BDMS focuses on complex treatments which are also unlikely to be regulated as such treatments require high investments and high skills to execute. Furthermore, given that BDMS has its own manufacturing plants, these facilities may absorb more indirect costs to decrease price mark-up which would limit the effect of price cap on margins.

[PRL-2] Price Listing Hospitals may be required to declare its service prices so prospective consumers can easily compare rates of each hospitals. BDMS offers unparalleled ability to treat complex treatments, only a few other hospitals in Thailand have the ability to treat sophisticated treatments like BDMS. We therefore do not believe that this regulation will have a major impact, especially as healthcare treatment is a necessity service which people are willing to pay a premium for.

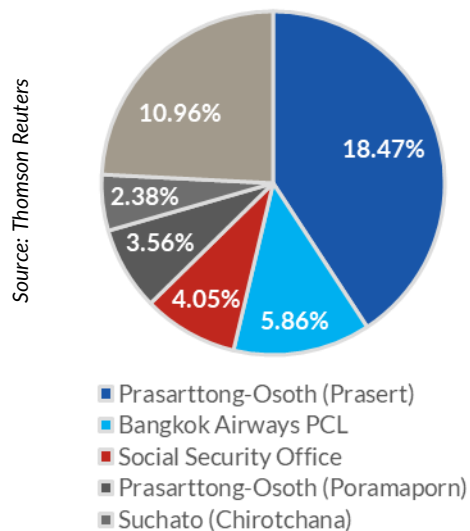
[PRL-3] Legal disputes due to malpractice: BDMS is subjected to litigation risks due to both healthcare services provision and management. Although BDMS has various policies to mitigate possible legal lawsuits from service provision such as quality of services, BDMS still needs mechanisms to manage the impact of its management decisions and other businesses, evident from the previous litigation originated from BDMS Life Privilege Club. More litigation would destroy the reputation and creditability of the company along with higher legal expenses.

Fig.30: Ownership Structure



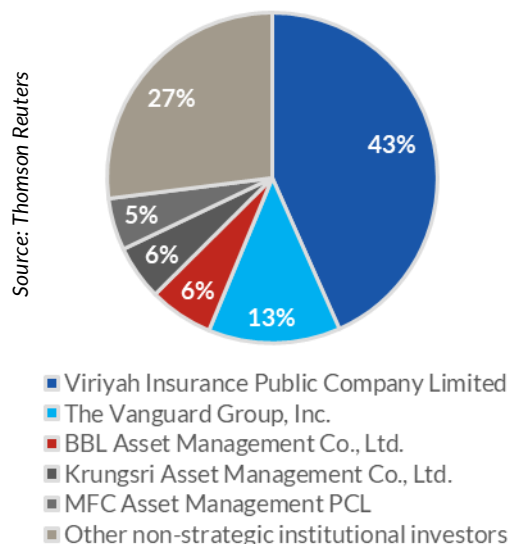
Source: Thomson Reuters; Team Analysis

Fig. 31: Top 5 Strategic Investors



Source: Thomson Reuters

Fig. 32: Top 5 Institutional



Source: Thomson Reuters

Strategic Risks

[SR-1] Increasing reliance on insurance payment method: Given BDMS's plan to ramp up its excess capacity utilization through increasing insurance patients, increasing insurance usage increases the bargaining power of insurance companies. This may negatively affect operating profit since insurance companies are incentivized to minimize healthcare expense by excluding unnecessary drugs and treatments. However, BDMS has mitigated this risk through strategically partnering with insurance companies to create its own co-branded health insurance plan.

Market Risks

[MR-1] Improvement of healthcare system in foreign countries: As governments launch policies to improve their national healthcare systems, the country's citizens are less likely to go abroad for medical treatment. For example, China has a vision of having Healthy China 2030. However, improving a healthcare system requires huge effort and is a fundamental change and would take a long time to implement. The company's revenue would be adversely affected by this negative risk. Nonetheless, we believe that the impact will be limited given overseas competitors will need time to develop its reputation and expertise.

[MR-2] Uncertain global macroeconomy's impact on revenue: With Thailand's high economic openness, the Thai economy is heavily reliant on exports to countries such as China. Given the current US-China trade war, there is high economic uncertainty. While domestic spending and government stimulus may soften the blow, such precarious global macroeconomy will impact the Thai economy. Nonetheless, since medical services is a non-cyclical sector and international patients only accounting for about 30% of BDMS' revenue the impact is expected to be limited.

[MR-3] Intense competition in the premium healthcare sector: BDMS operates in an attractive and growing sector. Existing competitors, both domestically and regionally, may become more competitive with the development of the private healthcare sector in the region. This poses a threat of losing clients to competitors. For example, the Singaporean government gives out subsidies on some treatments to attract medical tourists.

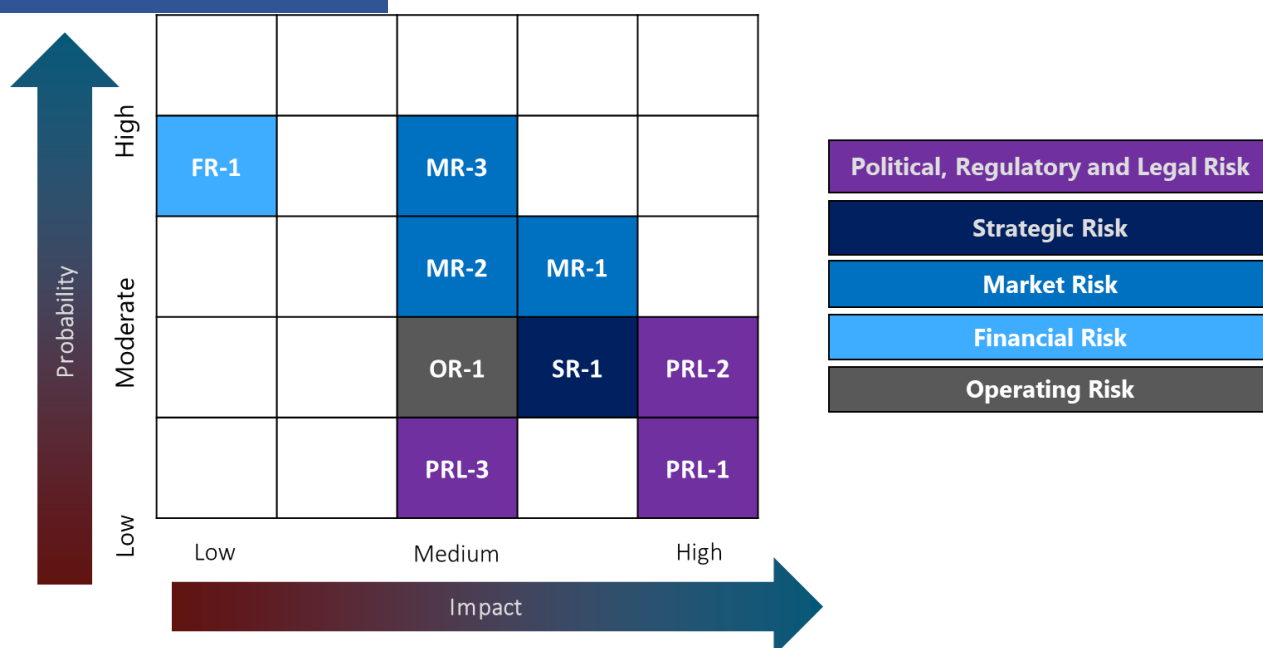
Financial Risks

[FR-1] Convertible Bond: As of December 20, 2018 there are about THB 4.69 billion (about 47% of the original amount) worth of outstanding convertible bonds. These can be converted into 229 million shares or about 1.46% of the current 15,668 million shares outstanding. Conversion of these bonds present a key dilution risk on BDMS's share price. Since BDMS's share price is currently well above the conversion price of THB 21.045 per share, it is highly probable that more bond holders will exercise their right before the maturity date on September 18, 2019.

Operational Risks

[OR-1] Shortage of medical personnel and risk of key staff outflow: Doctors, nurse and other technical experts are important stakeholders of BDMS. However, these professionals, especially multi-lingual professionals, are in high demand from both public and private healthcare sector resulting in a shortage. With CLMV countries joining AEC on 1 January 2019, there could be an additional threat of these professionals outflowing to neighboring countries. Offering attractive compensation packages to retain these professionals may result in cost increase. Furthermore, given BDMS's strategy of attracting patients through renowned practitioners, such as for the wellness clinic, failure to attract and retain them may be a key risk for the company.

Fig. 33: Risk Matrix



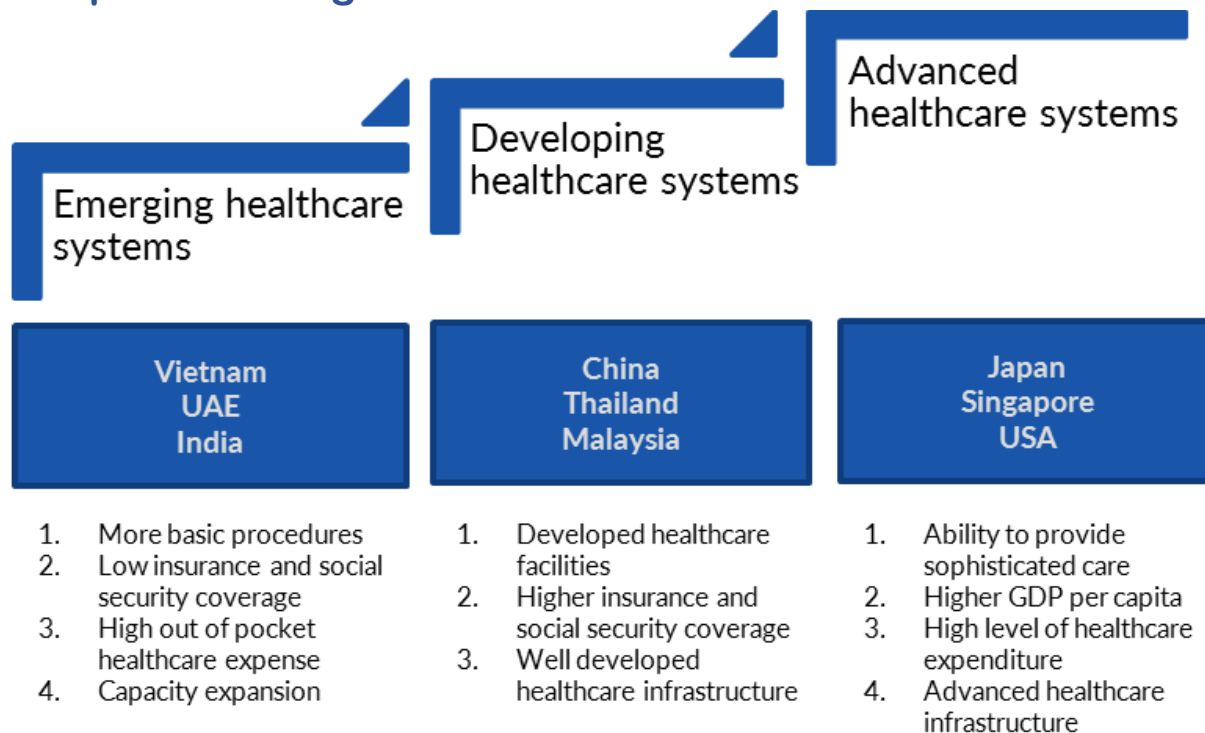
Source: Team Analysis

Appendix 1 : Comparison of Selected Peers

	BDMS	BCH	CHG	BH																																
Specialization	<ul style="list-style-type: none"> Trauma, Orthopedics Cancer Cardiovascular Neurology 	<ul style="list-style-type: none"> Diabetes Cardiology Oncology 	<ul style="list-style-type: none"> Hand and microsurgery Neonatal intensive care unit (NICU) Cardiology Oncology 	<ul style="list-style-type: none"> Cardiology Oncology Nephrology 36 other specializations 																																
Location targeting medical tourists	<ul style="list-style-type: none"> Various locations in Bangkok Strategic regional cities 	<ul style="list-style-type: none"> Don Muang (WMH) Rattanatibet (KIH) 	<ul style="list-style-type: none"> Samut Prakarn (CH3, CH9) Prachinburi (CH304) Chachoengsao (CH11) 	<ul style="list-style-type: none"> Sukhumvit 3 																																
Price	● Medium to High	◐ Medium	◐ Medium	● High																																
International Customer Base (% of total patient revenue)	<p>9M 2018</p> <table border="1"> <tr><th>Country</th><th>Percentage</th></tr> <tr><td>Japan</td><td>2.1%</td></tr> <tr><td>China</td><td>1.7%</td></tr> <tr><td>Cambodia</td><td>1.6%</td></tr> <tr><td>Myanmar</td><td>1.6%</td></tr> <tr><td>USA</td><td>1.5%</td></tr> <tr><td>Total</td><td>8.5%</td></tr> </table>	Country	Percentage	Japan	2.1%	China	1.7%	Cambodia	1.6%	Myanmar	1.6%	USA	1.5%	Total	8.5%	<p>9M 2018</p> <table border="1"> <tr><th>Country</th><th>Percentage</th></tr> <tr><td>Kuwaiti</td><td>3.4%</td></tr> <tr><td>Qatar</td><td>1.0%</td></tr> <tr><td>Omani</td><td>0.8%</td></tr> <tr><td>Chinese</td><td>0.6%</td></tr> <tr><td>UAE</td><td>0.5%</td></tr> <tr><td>Total</td><td>6.3%</td></tr> </table>	Country	Percentage	Kuwaiti	3.4%	Qatar	1.0%	Omani	0.8%	Chinese	0.6%	UAE	0.5%	Total	6.3%	<p>6M 2018</p> <table border="1"> <tr><th>Region</th><th>Percentage</th></tr> <tr><td>Middle East</td><td>4.0%</td></tr> </table>	Region	Percentage	Middle East	4.0%	<p>9M2018 Ranked Patient Revenue by Residence (66% int'l by nationality)</p> <ol style="list-style-type: none"> Thailand Myanmar UAE Omani Kuwaiti Cambodia Bangladesh Qatar USA Ethiopian
Country	Percentage																																			
Japan	2.1%																																			
China	1.7%																																			
Cambodia	1.6%																																			
Myanmar	1.6%																																			
USA	1.5%																																			
Total	8.5%																																			
Country	Percentage																																			
Kuwaiti	3.4%																																			
Qatar	1.0%																																			
Omani	0.8%																																			
Chinese	0.6%																																			
UAE	0.5%																																			
Total	6.3%																																			
Region	Percentage																																			
Middle East	4.0%																																			

Source: Company data, Team Analysis

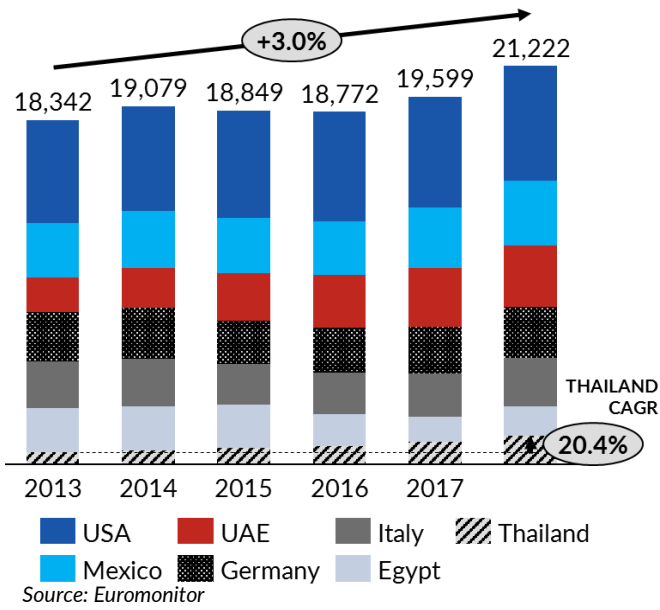
Appendix 2 : Comparison between healthcare at different developmental stage



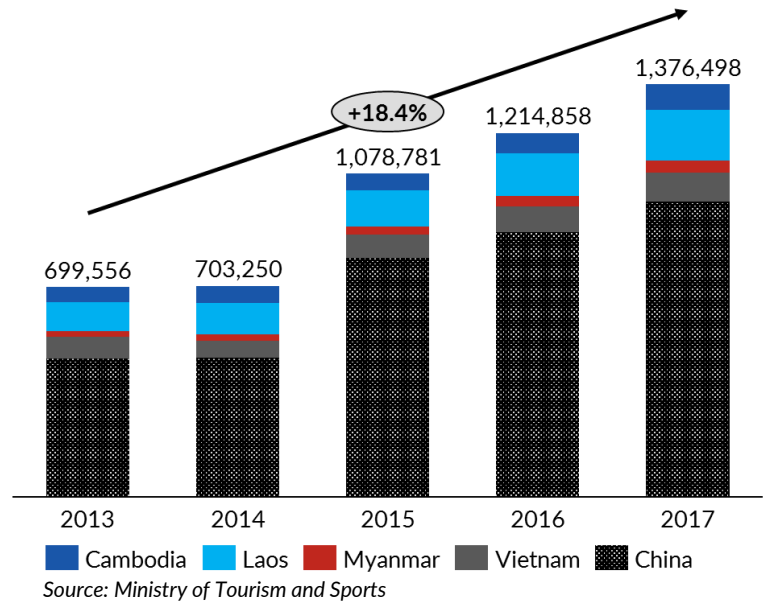
Source: Team Analysis

Appendix 3: Medical Tourism

Top Medical Tourism Destinations



CLMV and Chinese tourist arrivals to Thailand



Wellness tourism in Thailand

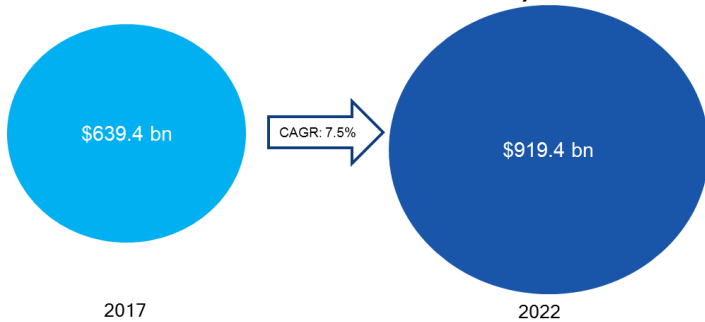
Thailand	13 th Largest Wellness Market in 2017
Annual Growth '15-'17	13.1%
Expenditure	\$ 12 bn
Inbound trips	5.6 mn

Growth in current health expenditure

Country	CAGR 2011-2016
Myanmar	34.7%
China	11.7%
Laos	11.5%
Thailand	5.6%
Vietnam	5.5%
World	4.0%
Japan	4.0%
USA	3.9%
France	2.5%

Source: World Health Organization

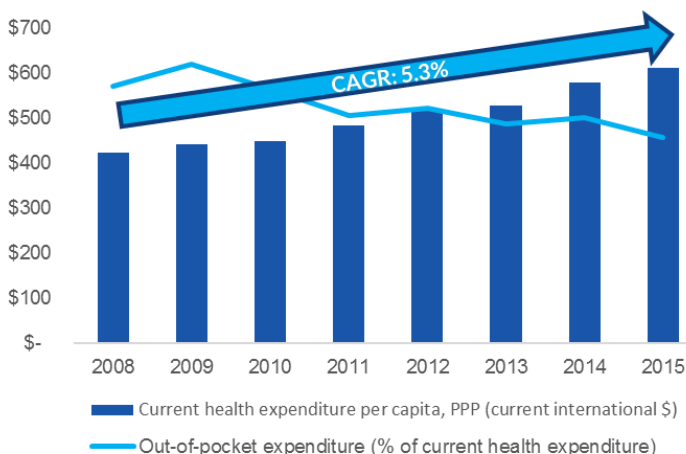
Value of Global Wellness Tourism Industry



Source: Global Wellness Institute

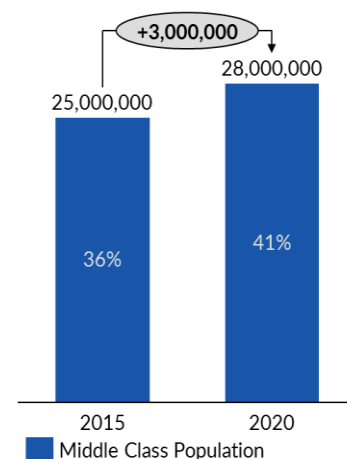
Appendix 4: Key Macro Trends

Current Health Expenditure per Capita



Source: WorldBank

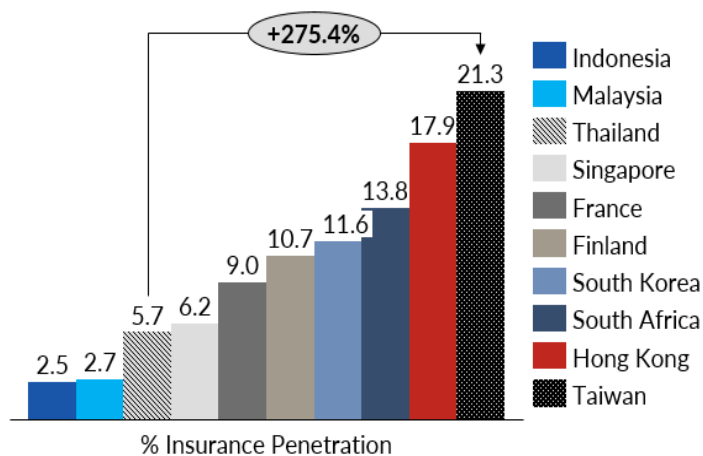
Middle Class Share of Population



Source: Boston Consulting Group

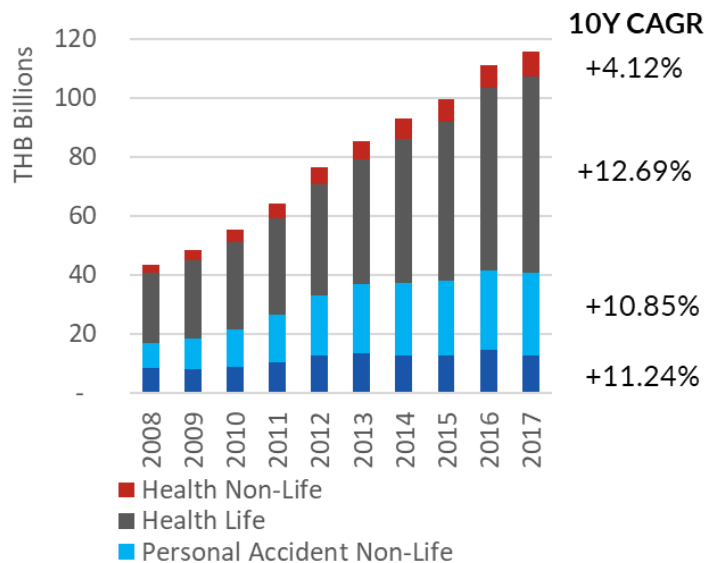
Appendix 5: Insurance

Insurance penetration comparison 2017



Source: OIC and Insurance Information Institute

Direct premium share of PA and health insurance by type



Source: OIC

Appendix 6 : BDMS's SWOT analysis

S-Strength

- BDMS is the largest hospital network in Thailand, who dominates the private hospital industry
- The company has various source of revenue from domestic to international and from cash to insurance patient. Therefore, the revenue is well-diversified against any particular risk in one location.
- A strong cash generation and other key financial items gearing BDMS for future expansion and enhance acquisition ability.
- High-quality care and ability to treat complex medical treatments

W-Weakness

- BDMS's depreciation expenses make up about 7 %of its annual revenues, the company's earnings are sensitive to changes in revenue and economic condition
- The company high amount of cash is an opportunity cost for the company

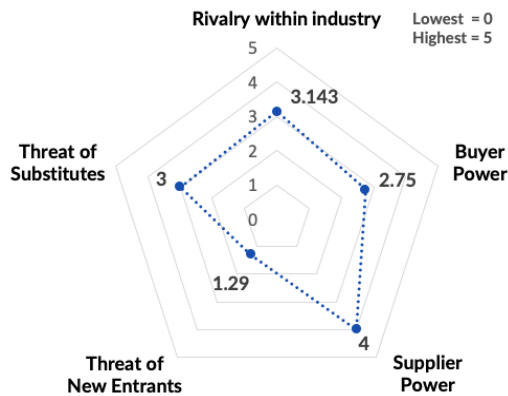
O-Opportunity

- Rising incomes implies for higher demand for better-quality healthcare services at private hospitals.
- An ageing population will require more complex medical treatments.
- Thailand is being viewed as a value-for-money destination for medical tourism.
- Immature insurance market with high insurance penetration rate

T-Threat

- The price regulation on medical services, supplies, and drugs
- Aggressive pricing policies of direct regional rivals such as hospitals in Singapore are being supported by their governments.
- Falling oil prices are causing Middle Eastern patients to be churn out .
- Political risk and natural disaster

Appendix 7 : Porter's Five Forces analysis



Source: Team Analysis

Main Categories (Average score)	Subcategories	Assessment	Attractiveness Score
Buyer Power (3.65)	Buyer concentration	Buyers are quite fragmented ranging from domestic to international and from self-pay to insured. Although there is an increasing number of insured and corporate contract penetration, the buyer mix is well-diverse	4
	Product differentiation	Products are generally differentiated at the higher end of the spectrum. However, for the bulk of the market product differentiation is generally the same.	3.5
	Switching costs	Buyers have typically low switching costs, as they are able to choose any hospital for their treatment.	2.5
	Buyer volume	Healthcare services can be considered as a nondiscretionary expenditure. Thus, buyer volume is unlikely to be highly affected by economic fluctuations compared to other industries.	4.5
Threat of substitutes (2.88)	Number of substitutes	Given that some lower tier of private hospitals have to compete with public hospitals, the number of substitutes are moderate.	3
	Relative price	With the increase of insurance penetration and corporate contract, the importance of relative price will decrease.	4
	Relative quality	Brand image, built up expertise and network enables some players to perceived as superior quality compared to its competitors.	2.5

	Incentive to substitute	The incentives for customers to substitute is high due to an increasing insured patient cares differentiation. However, location still play a vital role in decision making and decreases the incentive to switch	2
Rivalry within industry (3.25)	Industry concentration	The market is dominated by few conglomerate hospital groups. The potentially retaliation by the incumbents can be expected	1.5
	Size of competitors	The difference in size of private hospitals are noticeable as BDMS is 3.9x larger than its closest competitor in terms of revenue share. However, at the middle-tier and lower level, sizes are quite similar	3
	Industry growth	Given the ageing society, persistent of NCDs, and insurance penetration, the industry growth is moderately high and consistent	4.5
	Diversity of competitors	Main competitors are domestic public and private hospitals. However, with the increase in medical tourists domestic hospitals will need to increasingly compete with hospitals in other countries.	2.5
	Excess Capacity	Due to the previous CAPEX cycle, the industry has a moderate excess capacity. Different players have the plan to ramp up their capacity utilization through various strategies.	4
	Exit Barriers	Medical equipment are rather liquid compared to specific assets of other industries.	4
Threat of new entrants (3.92)	Economies of scale and scope	BDMS has created a high barrier to entry to the industry through its reputation, experience and network scale, thereby creating within group synergies and cost savings. Any existing competitor or new entrant would have a problem replicating it.	4.5
	Regulation	Given Thailand's restriction on foreign medical professionals from practicing in Thailand, disruptive medical technologies or firms from abroad will have a hard time entering the market.	3
	Switching costs	Buyers have typically low switching costs, as they are able to choose any hospital for their treatment.	3
	Capital requirements	A new or existing competitor would need to invest substantial resources to be able to fully	4

		compete with BDMS, both in terms of labor and human capital.	
	Expertise requirement	A new hospital would not have the same expertise or reputation built up over the years by leading players. It will take at least 3 years to do so as well as to acquire relevant accreditations.	4
	Distribution channels	Large players has established long lasting partners such as insurance companies, medical tourist agents and international emergency assistance.	4
	Defense of market share	Large players has credible threat to further increase its market share through more M&As.	5
Supplier Power (2.00)	Medicine and medical apparatus	Medicine price in Thailand is generally lower than other countries in the region. However, imported medicine and medical devices still have large influences.	3
	Medical professionals	Medical professionals, especially doctors, have high bargaining power towards hospitals since they directly relate to the service quality and complexity of care hospitals are able to provide.	1

Appendix 8: Key Assumptions

Revenue Driver											
	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F
Revenue from hospital business	75,518	81,615	88,708	96,696	105,765	115,787	126,196	136,617	146,768	156,239	165,027
Revenue from Non-hospital Business	3,067	3,374	3,745	4,194	4,655	5,121	5,582	6,001	6,361	6,647	6,846
Revenue from Wellness Clinic		513	770	1,154	1,731	2,597	3,376	4,389	5,267	6,004	6,425
Total Revenue exclude other income	78,585	85,502	93,223	102,045	112,152	123,505	135,154	147,007	158,395	168,890	178,298
OPD revenue	35,493	37,983	40,698	43,763	47,200	51,022	55,062	59,085	63,040	66,874	70,535
IPD revenue	40,024	43,632	48,010	52,934	58,566	64,765	71,134	77,533	83,728	89,364	94,492
Utilization of Beds											
Available beds	5,996	6,166	6,446	6,653	6,994	7,349	7,705	7,939	8,264	8,441	8,708
Utilization rate	66%	67%	67%	68%	68%	68%	68%	69%	69%	70%	70%
OPD number of visit per day											
Domestic	24,512	24,929	25,452	26,089	26,845	27,704	28,674	29,620	30,538	31,424	32,272
International	4,062	4,333	4,623	4,933	5,248	5,574	5,908	6,251	6,601	6,957	7,319
Total	28,574	29,261	30,075	31,021	32,093	33,278	34,582	35,871	37,139	38,381	39,591
OPD revenue per visit	3,403	3,556	3,707	3,865	4,029	4,201	4,362	4,513	4,650	4,774	4,881
IPD admission per year											
Domestic	1,217,640	1,254,169	1,307,471	1,366,308	1,434,623	1,506,354	1,578,659	1,649,699	1,715,687	1,775,736	1,829,008
International	241,630	253,712	268,934	285,070	301,319	317,590	333,788	349,809	365,551	380,904	395,759
Total	1,459,270	1,507,881	1,576,406	1,651,378	1,735,942	1,823,945	1,912,447	1,999,508	2,081,238	2,156,640	2,224,767
IPD revenue per IPD day	9,590	10,118	10,649	11,208	11,796	12,416	13,005	13,558	14,066	14,488	14,851
Average Daily Census											
Domestic	3,336	3,436	3,582	3,743	3,930	4,127	4,325	4,520	4,701	4,865	5,011
International	662	695	737	781	826	870	914	958	1,002	1,044	1,084
Total	3,998	4,131	4,319	4,524	4,756	4,997	5,240	5,478	5,702	5,909	6,095
Total ALOS	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86

Appendix 9: Forecasted 10Y Income statement

Bangkok Dusit Medical Service	Forecast												
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Income Statement													
Revenue													
Revenue from hospital management	65,237	69,123	75,518	81,615	88,708	96,696	105,765	115,787	126,196	136,617	146,768	156,239	165,027
Revenue from Non-hospital Business	2,667	2,810	3,067	3,374	3,745	4,194	4,655	5,121	5,582	6,001	6,361	6,647	6,846
Revenue from Wellness Clinic			0	513	770	1,154	1,731	2,597	3,376	4,389	5,267	6,004	6,425
Total Revenue	67,904	71,933	78,585	85,502	93,223	102,045	112,152	123,505	135,154	147,007	158,395	168,890	178,298
Expense													
Total COGS	45,277	47,975	51,456	55,881	60,845	66,084	72,026	78,621	85,297	91,996	98,356	104,134	109,231
Gross Profit	22,627	23,957	27,129	29,621	32,377	35,961	40,126	44,884	49,857	55,011	60,039	64,755	69,067
Total SG&A	13,644	14,488	15,160	16,782	18,273	19,968	21,898	24,053	26,261	28,505	30,672	32,686	34,509
Other Income	1,014	907	896	969	1,052	1,145	1,253	1,373	1,497	1,623	1,745	1,857	1,958
Interest Income	52	52	58	58	58	58	58	58	58	58	58	58	58
Dividend income	21	16	16	17	18	20	22	23	25	27	30	32	35
Other income	940	840	822	894	975	1,067	1,173	1,292	1,414	1,537	1,657	1,766	1,865
Operating Income	9,997	10,376	12,864	13,808	15,156	17,138	19,481	22,205	25,093	28,129	31,112	33,927	36,516
Depreciation and Amortization	4,803	5,168	5,542	5,945	6,375	6,833	7,308	7,784	8,258	8,730	9,233	9,763	10,318
EBITDA	14,800	15,544	18,406	19,753	21,532	23,972	26,789	29,988	33,352	36,859	40,344	43,689	46,834
Abnormal gain/loss	209	2,880	0	4,700	0	0	0	0	0	0	0	0	0
Income/Loss from Affiliate	1,370	1,417	1,553	1,134	1,237	1,354	1,488	1,639	1,793	1,951	2,102	2,241	2,366
EBIT (Normalized)	11,367	11,794	14,417	14,942	16,393	18,492	20,969	23,843	26,887	30,080	33,213	36,168	38,882
Finance cost	881	1,535	1,031	777	804	787	728	673	672	585	501	456	456
EBT (Normalized)	10,486	10,258	13,385	14,166	15,589	17,706	20,241	23,170	26,214	29,494	32,712	35,712	38,426
Tax	1,881	1,988	2,353	2,833	3,118	3,541	4,048	4,634	5,243	5,899	6,542	7,142	7,685
Net Income before minority interest (Normalized)	8,605	8,271	11,033	11,333	12,471	14,165	16,192	18,536	20,971	23,596	26,170	28,569	30,741
Minority Interest	385	359	392	427	466	508	555	605	660	720	786	857	935
Net Income (Normalized)	8,220	7,912	10,641	10,905	12,005	13,656	15,638	17,931	20,311	22,875	25,384	27,712	29,806

Source: Bloomberg and Team Analysis

Appendix 10: – Forecasted 10Y Balance sheet

Bangkok Dusit Medical Service	Forecast												
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Balance Sheet													
Assets													
Cash & Cash Equivalent	4,217	5,091	6,968	9,750	9,817	11,445	10,399	13,620	17,529	21,218	24,557	31,567	39,259
ST Investments	548	572	624	679	741	811	891	981	1,074	1,168	1,259	1,342	1,417
Accounts Receivable	5,754	6,429	7,493	8,153	8,889	9,730	10,694	11,776	12,887	14,017	15,103	16,104	17,001
Inventories	1,516	1,735	1,861	2,021	2,201	2,390	2,605	2,790	2,968	3,138	3,288	3,410	3,502
Other Current Assets	561	532	548	565	583	603	624	648	673	701	730	763	798
Total Current Assets	12,595	14,359	17,494	21,168	22,231	24,980	25,214	29,816	35,132	40,243	44,937	53,185	61,976
PPE, net	57,159	72,224	74,333	76,500	78,744	81,094	83,589	85,625	87,168	88,190	89,310	90,456	91,550
PPE	96,173	115,089	122,741	130,584	138,922	147,811	157,304	166,815	176,308	185,751	195,794	206,394	217,497
Accumulated depreciation	39,015	42,865	48,408	54,084	60,178	66,717	73,716	81,190	89,140	97,561	106,485	115,938	125,947
LT Investments	1,143	954	1,042	1,133	1,236	1,353	1,487	1,637	1,792	1,949	2,100	2,239	2,364
Goodwill	16,932	17,539	17,539	17,539	17,539	17,539	17,539	17,539	17,539	17,539	17,539	17,539	17,539
Other Intangible Assets	1,188	1,237	1,352	1,471	1,604	1,755	1,929	2,125	2,325	2,529	2,725	2,905	3,067
Deferred Tax Assets	75	68	68	68	68	68	68	68	68	68	68	68	68
Investment in Affiliates	16,401	15,807	17,269	13,450	14,665	16,052	17,642	19,428	21,261	23,125	24,917	26,568	28,048
Other LT Assets	1,521	438	479	521	568	622	684	753	824	896	965	1,029	1,087
Total Noncurrent Assets	94,419	108,268	112,082	110,683	114,423	118,484	122,938	127,175	130,976	134,296	137,623	140,804	143,722
Total Assets	107,015	122,627	129,576	131,851	136,653	143,463	148,152	156,990	166,108	174,538	182,561	193,990	205,699
Liabilities & Shareholders' Equity													
Liabilities													
Accounts Payable	3,123	3,306	3,546	3,843	4,176	4,526	4,924	5,364	5,807	6,251	6,669	7,047	7,377
Accrued Taxes Payable	700	706	648	1,039	859	975	1,115	1,276	1,444	1,625	1,802	1,967	2,117
Interest & Dividends Payable	-	-	-	-	-	-	-	-	-	-	-	-	-
Others Payables & Accruals	6,189	6,667	7,151	7,766	8,455	9,183	10,009	10,926	11,853	12,784	13,668	14,471	15,179
ST Debt	5,964	1,625	3,772	3,772	3,772	3,772	3,772	3,772	3,772	3,772	3,772	3,772	3,772
Other ST Liabilities	1,902	1,114	1,195	1,297	1,413	1,534	1,672	1,825	1,980	2,136	2,283	2,417	2,536
Total Current Liabilities	17,877	13,417	16,311	17,717	18,675	19,992	21,492	23,163	24,857	26,568	28,195	29,675	30,981
LT Debt	15,973	28,889	27,711	21,600	20,600	20,600	17,500	17,500	17,000	15,000	12,000	12,000	12,000
Convertible Bond	9,960	8,822	4,690	-	-	-	-	-	-	-	-	-	-
Pension Liabilities	1,928	2,006	2,099	2,279	2,482	2,696	2,938	3,207	3,479	3,753	4,012	4,248	4,456
Deferred Tax Liabilities	2,187	2,847	2,847	2,847	2,847	2,847	2,847	2,847	2,847	2,847	2,847	2,847	2,847
Other LT Liabilities	784	775	831	902	983	1,067	1,163	1,270	1,378	1,486	1,588	1,682	1,764
Total Noncurrent Liabilities	30,832	43,338	38,178	27,629	26,912	27,210	24,448	24,824	24,704	23,085	20,448	20,777	21,067
Total Liabilities	48,710	56,756	54,489	45,346	45,587	47,202	45,940	47,987	49,561	49,653	48,643	50,452	52,048
Equity													
Common Stock	1,549	1,549	1,569	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591
Premium/Additional to paid up capital	20,787	20,878	24,990	29,658	29,658	29,658	29,658	29,658	29,658	29,658	29,658	29,658	29,658
Retained Earnings	29,239	34,490	38,747	44,613	48,214	52,311	57,002	62,382	68,475	75,338	82,953	91,267	100,209
Other Equity	4,144	6,154	6,723	7,315	7,975	8,730	9,595	10,566	11,563	12,577	13,551	14,449	15,254
Minority/Non-Controlling Interest	2,586	2,800	3,059	3,328	3,629	3,972	4,365	4,807	5,261	5,722	6,165	6,574	6,940
Total Equity	58,305	65,871	75,087	86,504	91,067	96,262	102,211	109,004	116,547	124,885	133,918	143,538	153,651
Total Liabilities & Equity	107,015	122,627	129,576	131,851	136,653	143,463	148,152	156,990	166,108	174,538	182,561	193,990	205,699

Source: Bloomberg and Team Analysis

Appendix 11: Forecasted 10Y Cash flow statement

Bangkok Dusit Medical Service			Forecast										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Cash Flow													
Cash from Operating Activities													
Net Income	8,386	10,216	10,641	14,665	12,005	13,656	15,638	17,931	20,311	22,875	25,384	27,712	29,806
D&A	4,803	5,168	5,542	5,945	6,375	6,833	7,308	7,784	8,258	8,730	9,233	9,763	10,318
Provision (benefit) for Deferred taxes	7	660	0	0	0	0	0	0	0	0	0	0	0
Provision (reversal) for employee benefit	- 168	78	93	180	202	214	242	269	272	273	259	236	208
Other Non Cash Item	76	- 9	56	71	80	85	96	107	108	108	103	93	82
Change in Current Asset													
Accounts Receivable	441	- 675	- 1,064	- 660	- 736	- 841	- 964	- 1,083	- 1,111	- 1,130	- 1,086	- 1,001	- 897
Inventories	- 230	- 220	- 126	- 160	- 180	- 189	- 215	- 185	- 178	- 170	- 150	- 122	- 92
Adjusted Other Current Asset	- 91	36											
Change in Current Liabilities													
Accounts Payable	146	182	240	297	333	350	397	440	444	444	419	378	330
Accrued Taxes Payable	- 27	6	58	391	181	117	140	161	168	181	177	165	150
Others Payables & Accruals	- 624	478	484	615	690	728	826	916	928	931	884	803	708
Other ST Liabilities	63	- 788	81	103	115	122	138	153	155	156	148	134	118
Dividend Income	- 21	- 16	- 16	- 17	- 18	- 20	- 22	- 23	- 25	- 27	- 30	- 32	- 35
Cash from Operating Activities	12,783	15,132	15,873	21,432	18,687	21,054	23,584	26,471	29,329	32,370	35,341	38,129	40,696
Cash from Investing Activities													
ST Investments	- 520	- 24	(53)	(55)	(61)	(70)	(80)	(90)	(93)	(94)	(90)	(83)	(75)
CAPEX	- 8,342	- 20,233	(7,651)	(8,112)	(8,619)	(9,184)	(9,803)	(9,820)	(9,802)	(9,752)	(10,353)	(10,909)	(11,412)
LT Investments	227	189	88	92	102	117	134	150	154	157	151	139	125
Change in Goodwill	-	- 607	-	-	-	-	-	-	-	-	-	-	-
Change in Intangible Assets	- 152	- 49	- 114	- 119	- 133	- 152	- 174	- 195	- 200	- 204	- 196	- 181	- 162
Investment in Affiliates	- 1,308	594	- 1,462	3,819	- 1,215	- 1,388	- 1,590	- 1,786	- 1,832	- 1,865	- 1,791	- 1,651	- 1,480
Other LT Assets	- 820	1,083	41	42	47	54	62	69	71	72	69	64	57
Cash from Investing Activities	- 10,914	- 19,047	(9,409)	(4,601)	(10,177)	(10,964)	(11,842)	(12,111)	(12,153)	(12,144)	(12,651)	(13,027)	(13,310)
Cash from Financing Activities													
Dividend Paid	- 5,515	- 4,965	- 6,385	- 8,799	- 8,403	- 9,559	- 10,946	- 12,552	- 14,218	- 16,013	- 17,769	- 19,399	- 20,864
Paid up Capital	-	91	-	-	-	-	-	-	-	-	-	-	-
Cash from (Repayment) Debt													
ST Debt	3,025	- 4,339	2,148	-	-	-	-	-	-	-	-	-	-
LT Debt	- 1,403	12,916	- 1,178	- 6,111	- 1,000	-	3,100	-	500	- 2,000	- 3,000	-	-
Convertible Bond	277	- 1,139	-	-	-	-	-	-	-	-	-	-	-
Other Equity	348	2,010	569	592	661	755	865	971	997	1,014	974	898	805
Minority/Non-Controlling Interest	88	214	259	269	301	343	393	442	453	461	443	408	366
Cash from Financing Activities	- 3,180	4,789	(4,587)	(14,049)	(8,442)	(8,461)	(12,788)	(11,139)	(13,268)	(16,537)	(19,351)	(18,092)	(19,693)
Beginning Cash	5,529	4,217	5,091	6,968	9,750	9,817	11,445	10,399	13,620	17,529	21,218	24,557	31,567
Net change in Cashflow	- 1,312	874	1,877	2,782	67	1,628	(1,046)	3,221	3,909	3,689	3,339	7,010	7,692
Ending Cash	4,217	5,091	6,968	9,750	9,817	11,445	10,399	13,620	17,529	21,218	24,557	31,567	39,259

Source: Bloomberg and Team Analysis

Appendix 12: Ratios

	Actual			Forecast										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Profitability														
Return on Asset %	7.8%	7.7%	6.5%	8.2%	8.3%	8.8%	9.5%	10.6%	11.4%	12.2%	13.1%	13.9%	14.3%	14.5%
Return on Equity %	14.6%	14.1%	12.0%	14.2%	12.6%	13.2%	14.2%	15.3%	16.5%	17.4%	18.3%	19.0%	19.3%	19.4%
DuPont Analysis														
Net Profit Margin %	12.56%	12.10%	11.00%	13.5%	12.8%	12.9%	13.4%	13.9%	14.5%	15.0%	15.6%	16.0%	16.4%	16.7%
Asset Turnover %	62.38%	63.45%	58.66%	60.6%	64.8%	68.2%	71.1%	75.7%	78.7%	81.4%	84.2%	86.8%	87.1%	86.7%
Equity Multiplier %	1.86	1.84	1.86	1.73	1.52	1.50	1.49	1.45	1.44	1.43	1.40	1.36	1.35	1.34
ROE	14.58%	14.10%	12.01%	14.2%	12.6%	13.2%	14.2%	15.3%	16.5%	17.4%	18.3%	19.0%	19.3%	19.4%
Margin Analysis														
Gross Margin %	35.54%	33.32%	33.31%	34.5%	34.6%	34.7%	35.2%	35.8%	36.3%	36.9%	37.4%	37.9%	38.3%	38.7%
SG&A Margin %	19.81%	20.09%	20.14%	19.3%	19.6%	19.6%	19.6%	19.5%	19.5%	19.4%	19.4%	19.4%	19.4%	19.4%
Operating Income Margin %	15.83%	14.72%	14.43%	16.4%	16.1%	16.3%	16.8%	17.4%	18.0%	18.6%	19.1%	19.6%	20.1%	20.5%
EBITDA Margin %	22.68%	21.47%	21.34%	23.2%	22.8%	22.8%	23.2%	23.6%	24.0%	24.4%	24.8%	25.2%	25.6%	26.0%
EBIT Margin %	17.80%	16.74%	16.40%	18.3%	17.5%	17.6%	18.1%	18.7%	19.3%	19.9%	20.5%	21.0%	21.4%	21.8%
Net Profit Margin %	12.56%	12.10%	11.00%	13.5%	12.8%	12.9%	13.4%	13.9%	14.5%	15.0%	15.6%	16.0%	16.4%	16.7%
Asset Turnover														
Total Asset Turnover	62.4%	63.5%	58.7%	60.6%	64.8%	68.2%	71.1%	75.7%	78.7%	81.4%	84.2%	86.8%	87.1%	86.7%
Fixed Asset Turnover	71.9%	71.9%	66.4%	70.1%	77.2%	81.5%	86.1%	91.2%	97.1%	103.2%	109.5%	115.1%	119.9%	124.1%
Account Receivable Turnover	10.31	11.80	11.19	10.49	10.49	10.49	10.49	10.49	10.49	10.49	10.49	10.49	10.49	10.49
Inventory Turnover	32.01	29.87	27.65	27.65	27.65	27.65	27.65	27.65	28.18	28.74	29.31	29.91	30.54	31.19
Short Term Liquidity														
Current Ratio	0.89	0.70	1.07	1.07	1.19	1.19	1.25	1.17	1.29	1.41	1.51	1.59	1.79	2.00
Quick Ratio	77%	59%	90%	92%	105%	104%	110%	102%	114%	127%	137%	145%	165%	186%
Avg. Days Sales Out	33.48	32.11	30.91	32.33	33.40	33.36	33.30	33.24	33.20	33.30	33.40	33.55	33.72	33.89
Avg. Days Inventory Out	6.85	7.53	8.25	8.35	8.29	8.27	8.21	8.13	7.97	7.78	7.58	7.40	7.24	7.07
Avg. Days Payable Out	25.93	24.59	24.46	24.30	24.13	24.05	24.03	23.94	23.88	23.90	23.92	23.97	24.04	24.10
Avg. Cash Conversion Cycle	14.40	15.05	14.70	16.38	17.55	17.58	17.48	17.42	17.30	17.18	17.06	16.98	16.92	16.86

Source: Bloomberg and Team Analysis

Appendix 13: Forecasted 10Y Ratio (cont.)

	Actual			Forecast										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Long Term Solvency														
Total Debt/Equity	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Total Debt/Capital	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
LT Debt/Equity	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
LT Debt/Capital	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Liabilities/Total Asset	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Growth Over Prior Year														
Total Revenue	12.6%	6.4%	5.9%	9.2%	8.8%	9.0%	9.5%	9.9%	10.1%	9.4%	8.8%	7.7%	6.6%	5.6%
Gross Profit	12.2%	-0.3%	5.9%	13.2%	9.2%	9.3%	11.1%	11.6%	11.9%	11.1%	10.3%	9.1%	7.9%	6.7%
EBITDA	11.7%	2.1%	5.0%	18.4%	7.3%	9.0%	11.3%	11.8%	11.9%	11.2%	10.5%	9.5%	8.3%	7.2%
EBIT	10.2%	0.0%	3.8%	22.2%	3.6%	9.7%	12.8%	13.4%	13.7%	12.8%	11.9%	10.4%	8.9%	7.5%
Net Income	8.5%	2.5%	-3.7%	34.5%	2.5%	10.1%	13.8%	14.5%	14.7%	13.3%	12.6%	11.0%	9.2%	7.6%
EPS	0.52	0.53	0.51	0.68	0.69	0.75	0.86	0.98	1.13	1.28	1.44	1.60	1.74	1.87
Dividend per Share	0.32	0.36	0.32	0.41	0.55	0.53	0.60	0.69	0.79	0.89	1.01	1.12	1.22	1.31

Source: Bloomberg and Team Analysis

Appendix 14: Weighted Average Cost of Capital

	Forecast										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
WACC	7.98%	7.98%	7.98%	7.98%	7.98%	7.98%	7.98%	7.98%	7.98%	7.97%	7.97%
Cost of Equity	10.1%	9.26%	9.15%	9.08%	8.89%	8.83%	8.75%	8.63%	8.49%	8.45%	8.42%
Risk Free Rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Market Return	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Beta	79.82%	71.14%	69.95%	69.29%	67.21%	66.61%	65.83%	64.55%	63.05%	62.68%	62.35%
Market Risk Premium	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%
Weight of Debt	33%	23%	21%	20%	17%	16%	15%	13%	11%	10%	9%
Weight of Equity	67%	77%	79%	80%	83%	84%	85%	87%	89%	90%	91%
D/E	0.48	0.29	0.27	0.25	0.21	0.20	0.18	0.15	0.12	0.11	0.10
Cost of Debt	3.6%	3.61%	3.61%	3.61%	3.61%	3.61%	3.61%	3.61%	3.61%	3.61%	3.61%

Source: Bloomberg and Team Analysis

Appendix 15: Discounted Cash Flow

		Forecast										
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
EBIT	THB mm	14,417	19,642	16,393	18,492	20,969	23,843	26,887	30,080	33,213	36,168	38,882
Tax	THB mm	2,353	3,773	3,118	3,541	4,048	4,634	5,243	5,899	6,542	7,142	7,685
NOPAT	THB mm	12,064	15,869	13,275	14,951	16,921	19,209	21,644	24,181	26,671	29,025	31,197
Depreciation	THB mm	5,542	5,945	6,375	6,833	7,308	7,784	8,258	8,730	9,233	9,763	10,318
(Increase) / Decrease in working capital	THB mm	(444)	586	42	286	322	404	405	410	392	357	317
CAPEX	THB mm	(7,651)	(8,112)	(8,619)	(9,184)	(9,803)	(9,820)	(9,802)	(9,752)	(10,353)	(10,909)	(11,412)
FCFF	THB mm	9,511	14,289	11,074	12,887	14,748	17,577	20,505	23,570	25,943	28,236	30,419
Interest*(1-tax)	THB mm	(825)	(621)	(644)	(629)	(583)	(538)	(538)	(468)	(401)	(365)	(365)
Net Borrowing	THB mm	3,772	(2,338)	2,772	3,772	672	3,772	3,272	1,772	772	3,772	3,772
FCFE	THB mm	12,458	11,329	13,203	16,030	14,838	20,811	23,240	24,874	26,314	31,644	33,827

As of 31 December 2019

Total debt 25372 THB mm

Cash 9750 THB mm

Net debt 15,623 THB mm

Number of shares mm 15,910 Share mm

EV 450,499 THB mm

Equity value 434,876 THB mm

Current Price 23.60 THB/share

Share price (FCFF) 27.33 THB/share

Percentage Up side 15.82% percent

EBITDA 2019 18,406 THB mm

Net profit 2019 10,905 THB mm

EBITDA 2020 21,532 THB mm

Net profit 2020 12,005 THB mm

Net profit growth 17-19 10%

Implied EV/EBITDA 24.5x

Implied P/E 39.9x

Equity Value 451,652 THB mm

Share Price (FCFE) 28.39 THB/share

Percentage Up side 20% percent

Source: Bloomberg and Team Analysis

Appendix 16: Price control analysis

Margin Analysis	Forecast										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Gross Margin %	34.5%	34.6%	24.7%	25.2%	25.8%	26.3%	26.9%	27.4%	27.9%	28.3%	28.7%
EBITDA Margin %	23.2%	22.8%	13.0%	13.3%	13.7%	14.1%	14.5%	14.9%	15.3%	15.7%	16.1%
EBIT Margin %	18.3%	17.5%	7.6%	8.1%	8.7%	9.3%	9.9%	10.5%	11.0%	11.4%	11.8%
Net Profit Margin %	13.5%	12.8%	4.9%	5.4%	5.9%	6.5%	7.0%	7.6%	8.0%	8.4%	8.7%

Source: Bloomberg and Team Analysis. Color scale is range from most favourable (green) to least favourable (red).

Appendix 17: Other risks

Political, Regulatory and Legal Risks

Tax policies: Changes in accounting standards and tax requirements could affect BDMS's financial results. Furthermore, a change in BOI's tax and non-tax incentives for investment projects may affect BDMS' investment plans as well.

Change in SSO compensation policies: If the Thai Social Security Office (SSO) introduces a new compensation method to member hospitals, BDMS may be impacted. However, the impact is expected to be limited on BDMS due to the limited number of SSO patients accepted by BDMS and the company's strategic shift towards insurance and corporate contract.

[PRL-3] Political uncertainty: With the upcoming election in 2019, Thailand's political unrest may be triggered. This may cause postponement or a reduction in medical tourists to Thailand due to their concern about safety and convenience. Nonetheless, medical tourism industry would not be affected as much as traditional tourism industry as demand for healthcare is more inelastic. Moreover, BDMS' diversified source of revenue means the company have a cushion and the impact would be limited.

Strategic Risks

M&A: Although BDMS's management has stated that it is not actively considering any further M&A and would focus on ramping up capacity utilization, it would be open to attractive deals. This may include geographic expansion and enhancing capabilities. From our analysis, we believe BDMS will not seek to diversify its activities outside the medical services industry.

Dependency on domestic consumers: BDMS derives about 70% of its revenue from domestic sources. However, given the nature of BDMS as a defensive growth stock, we believe that BDMS' exposure to economic downturn will be limited.

Market Risks

Increase in regional trade liberalization and M&A: Due to a greater level of regional trade liberalization from CLMV countries officially joining AEC, ASEAN-HKC FTA and ASEAN-HKC Investment Agreement effective on January 1st 2019, inbound and outbound merger and acquisitions trend could be stimulated. While this offers the opportunity for BDMS to expand into a growing emerging markets, it may also experience greater competition in the private healthcare sector.

FX Risks. Appreciation of THB may reduce the price competitiveness of BDMS' service offerings. However, at the same time such event would still be beneficial for BDMS through lowering the import cost of drugs and medical devices. Furthermore, although the price competitiveness of BDMS is reduced, BDMS still have distinct brand and service offering differentiation.

Operational Risks

Unable to meet quality standard: With 48 hospitals in its network, BDMS has increasing hospital operation quality management risks. However, given the company's track record of M&A and delegated management accountabilities, BDMS has shown to be effective in maintaining quality standards and scaling its operations.

Natural Risks

Natural disasters: Occurrence of natural disasters may cause disruption to BDMS' business operations, including both hospital operations and medical product manufacturing. Nonetheless, given the company's prior experience of disaster mitigation, such as during the 2011 flood, the company should be well prepared for future and have established contingency plans.

ⁱ National Statistics Office

ⁱⁱ 12th National Development Plan

ⁱⁱⁱ Office of Insurance Commissions

^{iv} World Health Organization

^v Global Wellness Institute

^{vi} National Economic and Social Development Council

^{vii} Euromonitor

^{viii} CEIC Data

^{ix} Boston Consulting Group

^x United Nations Population Division

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- xi Medical Tourism Index
 - xii Kasikorn Research
 - xiii Joint Commission International
 - xiv Global Access to Healthcare by The Economist Intelligence Unit
 - xv National Health Commission of the People Republic of China
 - xvi Ctrip.com
 - xvii OECD