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Evaluating Global Profitability Impacts of the COVID-19 Pandemic on Private Investor-Owned Health Systems

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Introduction

On March 11, 2020, the World Health Organization designated COVID-19 a pandemic (WHO, 2020). Nearly two years later, the human cost of the pandemic is catastrophic, with over five million dead and innumerable families affected. The economic devastation wrought by COVID-19 was also felt worldwide, with serious supply chain disruptions, staff shortages, and manufacturing interruptions. Many countries "at the pinnacle of the pyramid of manufacturing and global supply chain" were hit hard, decimating the global economy (Ibn-Mohammed et al., 2021). In addition, amid the unprecedented pandemic panic, consumer spending dropped, representing a significant shock to demand trends (Baldwin et al., 2020). Overall, trillions of dollars were lost across industries, with some sectors forever changed by the historic pressures of the pandemic (Naidoo & Fisher, 2020). The healthcare sector was no exception and economic hardship was felt in both public and investor-owned hospitals, with $202.6 billion in lost revenue in American hospitals alone (Kaye et al., 2021).

There has been a long debate whether investor-owned or publicly owned hospitals are "better" based on a variety of cost, quality, access, and efficiency measures (Jeurissen 2010). For example, Kruse et al. (2018) argue that public hospitals are just as efficient, if not more efficient and accessible than private hospitals. Alternatively, Rosko et al. (2018) observed that high-efficiency hospitals exhibited enhanced labor productivity, required fewer hospital beds, and were highly more likely to be privately-owned and part of a multi-hospital system than publicly owned and nonprofit. Regarding the financial health of private hospitals, Enumah et al. (2021) found that private hospital status even before the pandemic experience indicated an increased likelihood of financial distress compared to public hospitals. The author's evaluation of U.S. hospital data between 2011 and 2018 identified that among the possible factors that contribute to a hospital's wellbeing come from an equation based on the financial ratios of liquidity, profitability, efficiency, and leverage. The findings of Enumah et al., however, are contrary to the conclusions by Tenas and Arimany-Serrat (2016) who found that private hospitals within the region of Catalonia enjoyed general financial health between 2008-2013.

Looking beyond this often-reductive debate, our research seeks to explore how a uniquely global event, COVID-19, affected the financial viability of investor-owned hospitals around the world. Researchers may gain insights into public hospital groups as those financial data are widely available. However, the data required to understand why private groups succeeded or suffered during COVID-19 is less accessible. The developments of national and international hospital groups, moreover, are yet to be evaluated from an international perspective. To develop an appreciation for the financial operations of the entire healthcare sector during this global health crisis, it is essential to investigate privately owned, publicly listed hospital financing around the world. Thus, this exploratory study aims to provide a pathway not just in how the pandemic has impacted investor-owned hospital groups, but to an international perspective on the viability of such groups in the long term.

This brief examines financial performance metrics global hospital groups and systems based on publicly available financial data. This cross-section encompasses hospitals in low-, middle-, and high-income countries. Evaluating privately owned, publicly listed hospital groups through financial metrics is a novel research approach and could provide unique insights on financial prospects and the hospital sector as a whole. By conducting an exploratory analysis of how private equity hospitals around the world have weathered the global pandemic, we hope to inform discussions on international and national health policy relating to the sustainability of privately-owned hospitals. The remaining sections of this paper include the background of COVID-19 impacts on global hospital systems based on recent literature, our methods surrounding hospital group inclusion criteria and financial metric data gathering, the results of our analysis, discussion of main observations, and conclusions to be drawn by our study.

World health systems are everything short of uniform. With variability in terms of structure and economic standing, each system can be expected to differ

in its responses and viability during a worldwide health emergency. Globally, the COVID-19 pandemic has exposed vulnerabilities in healthcare systems and shown the capacities in which they are limited such as access to adequate resources and equitable access to quality care.

Healthcare financing has also been greatly affected during COVID-19 and less is known about this crucial element of the healthcare sector. For example, by mid-2020, the three largest investor-owned hospital groups listed on the Johannesburg Stock Exchange, Mediclinic International, Life Healthcare, and Netcare, experienced stock price year-to-date declines of 28%, 22%, and 25.8% respectively (Visser 2020). It is currently unclear why certain hospital groups have weathered the economic deterioration brought about by the pandemic and others did not. Previous research sheds little light on this key question.

Few researchers have broadly explored the impact of COVID-19 on the financial sustainability of privately-owned hospitals. Kruse and Jeurissen (2020) predicted a weaker hospital sector amid the pandemic, evaluating operating revenue, average annual profit margin, and solvency rate of different hospital groups in the UK, Australia, Germany, Indonesia, Malaysia, Hong Kong, Italy, France, Denmark, and Spain. Williams et al (2021) examined financial crises of hospitals in low- and middle-income countries amid the pandemic, particularly those suffering liquidity issues. Other researchers focused more narrowly on the effect of the pandemic on private hospitals in single countries, such as South Africa and Palestine (Visser, 2020, and Ekmeil et al, 2020, respectively.) In South Africa, Visser found steep declines in share prices. Beyond Kruse et al (2018), none of these studies are especially instructive, as they do not offer a global cross-sectional analysis of several financial metrics.

Data Gathering and Analysis

The research team relied on the Bloomberg Terminal application (https://bba.bloomberg.net/) for the identification of targeted organizations and data gathering. Companies included in this research project were identified by a query into the Bloomberg terminal database with the search term "hospitals" and further refined the search to focus on equities that were being actively traded or actively reporting financial data to international stock exchanges during the Summer of 2021. This initial query resulted in an initial list of 63 organizations worldwide. The database was then queried to gather data on four variables to be used in this preliminary analysis over a quarterly reporting period. Since the research question at hand in this study was to assess the changes in financial performance brought on hospital companies by the COVID-19 pandemic, a pre-pandemic "control" was envisioned as being the eight calendar quarters preceding the height of the pandemic that generally occurred around the second and third calendar quarters of 2020. This nearly two-year period was intended to establish a "normal" run rate on the four variables measured in the study and compare them with the same results in the calendar quarters during and since the second quarter (April 1 - June 30) of 2020. Thus, the data gathered for the study spanned the period beginning April 1, 2018, and ending June 30, 2021, and encompassed these four variables:

- Total Revenues ("revenues");
- Earnings Before Interest, Taxes, Depreciation & Amortization ("EBITDA");
- Return on Equity ("RoE"); and
- Closing share price at the end of each calendar quarter ("price").

Data was downloaded from the Bloomberg Terminal to a Microsoft Excel spreadsheet for analysis. All variables were queried in amounts converted to United States Dollars ("USD") in the Terminal query application other than RoE which was retrieved as a percentage. It was noted that twenty-two (22) companies did not report data for all variables for all quarters, such as EBITDA or RoE. Those companies reported revenues and net income but did not provide balance sheet data to calculate RoE nor income statement details to calculate EBITDA and so were excluded from the analysis. Another nine (9) organizations were found to operate specialty clinics or had a greater focus on ambulatory specialty care (e.g., ophthalmology or cardiology) than inpatient hospital care and so were also omitted from the study, leaving a final study population of 36 hospital corporations with hospitals in 23 different nations worldwide. The list of companies studied included the country in which they operated hospitals and was used to group companies for analysis in the study. The companies and which of the seven regions worldwide in which they operate are summarized in Table 1.

Two companies (Ramsay Healthcare and Medi-Clinic) operate hospitals on multiple continents (Asia/Europe/Australia and Europe/Middle East/South Africa, respectively) and were classified as "multi" for purposes of this study.

TABLE 1: FREQUENCY DISTRIBUTION OF COMPANIES BY REGION

Region	Companies
Asia	19
Europe	3
IndoAsia	3
Middle East	4
Multi	2
South America	1
US	4
Total	**36**

Four (4) of the thirty-six companies reported financial data on a semi-annual (every six months) basis as required by their home country stock exchanges. The data for these four companies were converted from semi-annual to quarterly using a straight-line assumption where the days in each quarter were used to prorate revenue and EBITDA results. RoE was assumed the same for both quarters within the semiannual period under this straight-line assumption. The stock price for those companies was able to be queried for the quarter-end dates in question from the Bloomberg database. Two large companies in our study dataset publicly reported all data other than share price as they were privately held companies for all or part of the study period. We included those two companies in our analysis of revenue, EBITDA, and RoE - but omitted them from the analysis of stock prices.

OVERVIEW OF REVENUE PERFORMANCE

Revenues by quarter were arrayed in chronological order for each company and analyzed to note quarters where the minimum and maximum values occurred during the period examined here. We found that minimum revenue values occurred predominantly in Q2 of 2020, whereas maximum revenue values occurred in Q2 of 2021, as noted in Table 2. Two companies (Ramsay Healthcare and MediClinic) operate hospitals on multiple continents (Asia/Europe/Australia and Europe/Middle East/South Africa, respectively) and were classified as "multi" for purposes of this study. The change in average revenues during the "control" period (April 1, 2018 - March 31, 2020) was compared to the average revenues for each company in the quarters during the pandemic (April 1, 2020 - June 30, 2021) and assessed as to their change (increase or decrease) and if such change was statistically significant using a t-test comparison of means at a 0.05 level of significance. The results of this comparison are presented in Table 3.

TABLE 2: NUMBER OF COMPANIES REPORTING MINIMUM AND MAXIMUM REVENUES BY QUARTER

Maximum		Minimum		
Q2 2018	2	Q2 2018	9	**Control Period**
Q3 2018	1	Q3 2018	2	
Q4 2018	0	Q4 2018	2	
Q1 2019	0	Q1 2019	0	
Q2 2019	0	Q2 2019	0	
Q3 2019	4	Q3 2019	0	
Q4 2019	4	Q4 2019	0	
Q1 2020	1	Q1 2020	2	
Q2 2020	1	Q2 2020	16	**Pandemic Period**
Q3 2020	2	Q3 2020	1	
Q4 2020	3	Q4 2020	1	
Q1 2021	1	Q1 2021	3	
Q2 2021	17	Q2 2021	0	
Total	**36**	**Total**	**36**	

Table 3 describes the changes in revenue within each region. Interestingly, while decreases were observed in nearly half of all companies in the study, fewer than 25% of those with an observed decline were statistically significant changes. Conversely, of the 53% of companies with increased average revenues, 42% experienced statistically significant increases from the pre-pandemic period. Those organizations with revenue declines during the COVID pandemic likely suffered such losses as a result of the need to cannibalize capacity away from high-revenue elective cases such as orthopedics, cardiology, and oncology. Foregoing such high revenue services, usually paid at higher rates by commercial insurance plans in the United States was noted as a factor in revenue declines there (Cox, et al., 2021; Khullar, et al., 2020). However, a Kaufman, Hall & Associates study in 2020 noted the declines in US revenues would have been as much as 12% greater without government subsidies provided under the CARES act (Kaufmann Hall, 2020). Investor relations sources for international companies such as Apollo Hospitals (India), Cleopatra Hospitals (Egypt), and Ramsay

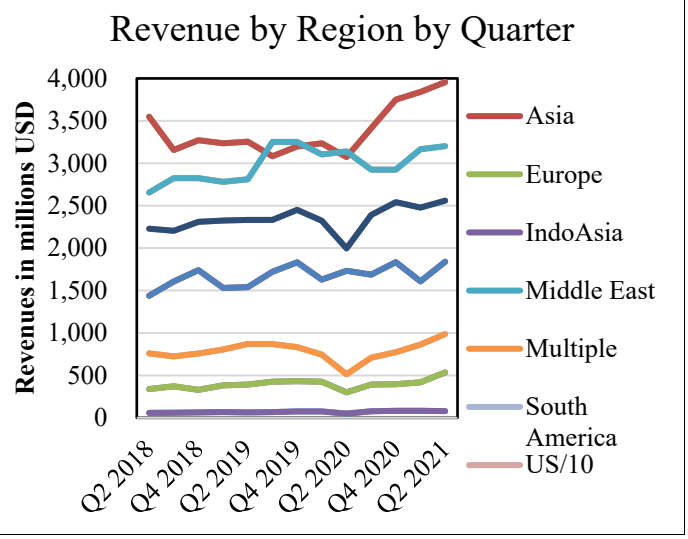
Healthcare (Multiple regions) mentioned similar explanations for revenue growth noted in those areas.

TABLE 3: COMPARISON OF AVERAGE REVENUES BY QUARTER PRE- AND DURING-PANDEMIC
(% OF COMPANIES IN THE REGION, NUMBER OF COMPANIES WITH STATISTICALLY SIGNIFICANT CHANGES IN PARENTHESES)

Region	Decrease		Increase	
Asia *(n=19)*	9	*(47%, 2)*	10	*(53%, 5)*
Europe *(n=3)*	1	*(33%, 0)*	2	*(67%, 1)*
IndoAsia *(n=3)*	2	*(67%, 0)*	1	*(33%,0)*
Middle East *(n=4)*	2	*(50%, 1)*	2	*(50%, 1)*
Multi *(n=2)*	1	*(50%, 0)*	1	*(50%, 0)*
South America *(n=1)*	0	*(0%, 0)*	1	*(100%, 0)*
US *(n=4)*	2	*(50%, 1)*	2	*(50%, 1)*
Totals *(n=36)*	**17**	***(47%, 4)***	**19**	***(53%, 8)***

Tracking revenues by a quarter across the study period also illustrates the general upward trend for revenues across all regions as the pandemic continued through 2020 and into the first half of 2021 as shown in Figure 1.

FIGURE 1: TREND OF AVERAGE REVENUES BY QUARTER



It, therefore, seems that the COVID-19 pandemic did have a generally upward influence on revenues for companies worldwide. The increase in utilization arising from COVID-19 hospitalizations, along with external subsidies appeared to drive those relative increases noted during the COVID pandemic. Organizations with declines appeared to lose significant elective revenues without replacement by other patient volumes.

OVERVIEW OF EBITDA PERFORMANCE

Observations of EBITDA performance across the study period exhibited a similar distribution to that of revenues, with 10 of the 36 companies (27.8%) achieving minimum profitability levels during the second quarter of 2020 and 9 of 36 (25%) reaching maximums in the second quarter of 2021. However, comparing average EBITDA by a quarter during the pandemic to the pre-pandemic control also showed a slight downward trend in earnings worldwide as elaborated in Table 4:

TABLE 4: COMPARISON OF AVERAGE EBITDA BY QUARTER PRE- AND DURING-PANDEMIC
(% OF COMPANIES IN THE REGION, NUMBER OF COMPANIES WITH STATISTICALLY SIGNIFICANT CHANGES IN PARENTHESES)

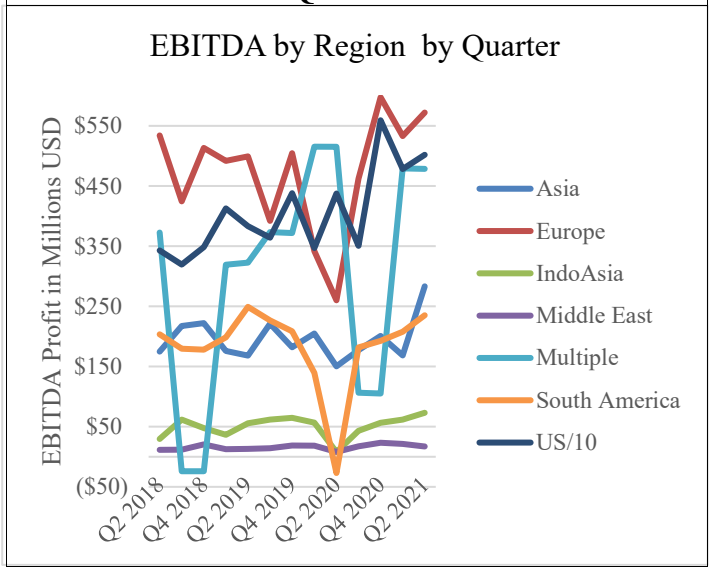
Region	Decrease		Increase	
Asia *(n=19)*	11	*(58%, 2)*	8	*(42%, 3)*
Europe *(n=3)*	2	*(67%, 0)*	1	*(33%, 0)*
IndoAsia *(n=3)*	2	*(67%, 0)*	1	*(33%, 0)*
Middle East *(n=4)*	3	*(75%, 0)*	1	*(25%, 0)*
Multi *(n=2)*	1	*(50%, 0)*	1	*(50%, 0)*
South America *(n=1)*	1	*(100%, 0)*	0	*(0%, 0)*
US *(n=4)*	0	*(0%. 0)*	4	*(100%, 1)*
Totals *(n=36)*	**20**	***(56%, 2)***	**16**	***(44%, 4)***

The majority of hospital operators appeared to see a decline in EBITDA from pre-pandemic levels, though only a few saw significant changes. Although revenues generally increased, the lack of a commensurate change in EBITDA may not be entirely surprising given the higher proportion of high-cost ICU days required to treat a patient hospitalized with COVID-19 (Rees, et al., 2020). Interestingly all four companies in the United States showed EBITDA increases during the pandemic, primarily due to higher acuity-based reimbursements and additional funding from the US government that paid the costs of COVID-19 care for patients without health insurance (Khullar, et al., 2020).

Of the 16 hospitals that experienced an increase in EBITDA, 12 (75%) had increases in revenues over the same period. Conversely, of the 20 hospitals noting a decline in EBITDA, 14 (70%) also had declines in revenues at the same time. The overall trend across the study period for EBITDA follows a similar path to revenues, as shown in Figure 2.

Thus, it appears that EBITDA results observed in this study had a strong association with changes in revenue at the same time. Considering the costs of care for COVID patients could be greater with greater ICU service intensity, this appears an interesting finding. It seems suggestive that revenues paid for COVID care services were commensurate with the expected costs of delivering that longer-term, higher acuity care in most regions of the world.

FIGURE 2: TREND OF AVERAGE EBITDA BY QUARTER



OVERVIEW OF RETURN ON EQUITY PERFORMANCE

Return on Equity appeared to trend much in the same direction with EBITDA profits in the two comparison periods. However, changes in the amount of equity invested in some hospital companies during the pandemic also appeared to have an impact in moderating how much of an organization's profit filtered to actual returns on invested equity. While EBITDA itself is not a specific component of the RoE calculation, it instead better approximates cash generated from operations. Nonetheless, it is a precursor to the net income amount used in calculating this ratio. We use it here as a limited element in our analysis to generally associate changes in profitability with changes in RoE and nothing more. The summary of RoE across the two periods is presented in Table 5:

TABLE 5: COMPARISON OF AVERAGE ROE BY QUARTER PRE- AND DURING-PANDEMIC
(% OF COMPANIES IN THE REGION, NUMBER OF COMPANIES WITH STATISTICALLY SIGNIFICANT CHANGES IN PARENTHESES)

Region	Decrease		Increase	
Asia *(n=19)*	11	*(58%, 9)*	8	*(42%, 2)*
Europe *(n=3)*	3	*(100%, 2)*	0	*(0%, 0)*
IndoAsia *(n=3)*	3	*(100%, 0)*	0	*(0%, 0)*
Middle East *(n=4)*	3	*(75%, 0)*	1	*(25%, 0)*
Multi *(n=2)*	2	*(100%, 1)*	0	*(0%, 0)*
South America *(n=1)*	1	*(100%, 1)*	0	*(0%, 0)*
US *(n=4)*	2	*(50%, 0)*	2	*(50%, 1)*
Totals *(n=36)*	**25**	***(69%, 15)***	**11**	*(31%, 4)*

Of particular interest in the review of this variable was that fully 60% of companies seeing declines had that decline be statistically significant. During the last quarter of 2019 and the first two quarters of 2020, hospital ROE was on a steady decline in all regions, as hospitals re-tooled for expected surges in demand later in 2020 and those investments resulted in the use of equity. As equity balances declined with capacity investment on a declining earnings base, a reduced RoE would make sense. Also, as investors sought gains from new technologies such as telemedicine, equity was drawn away from hospital companies to other health care investments (Klebnikov & Hansen, 2020).

Of the 11 companies with an increase in RoE, 10 also had an increase in EBITDA profits, suggesting that observed increases in RoE were likely tied to net income. The one exception - Community Health Systems in the United States - was going through some restructuring of assets and recorded many income items below EBITDA on the income statement that adversely impacted net income during the pandemic. No such charges were directly related to the pandemic itself but instead to financial difficulties in that organization (Securities & Exchange Commission, 2021).

OVERVIEW OF STOCK PRICES

Similar to observed changes in RoE, the stock prices for hospital companies generally trended downward during the pandemic. As noted earlier in this paper, two companies in the study (BMI Healthcare in the U.K. and Rede d'Or Hospitals in Brazil) operated during all or part of the study period without publicly traded stocks and so stock exchange values for those companies were not reported here, leaving 34 hospital companies reported in this segment of the analysis. A summary of the average price per share for hospital companies by region, before and during the pandemic is presented in Table 6.

TABLE 6: COMPARISON OF AVERAGE SHARE PRICE BY QUARTER PRE- AND DURING-PANDEMIC
(% OF COMPANIES IN REGION, NUMBER OF COMPANIES WITH STATISTICALLY SIGNIFICANT CHANGES IN PARENTHESES)

Region	Decrease		Increase	
Asia *(n=19)*	14	*(74%, 1)*	5	*(26%, 1)*
Europe *(n=2)*	1	*(50%, 0)*	1	*(50%, 0)*
IndoAsia *(n=3)*	2	*(67%, 0)*	1	*(33%, 1)*
Middle East *(n=4)*	1	*(25%, 0)*	3	*(75%, 2)*
Multi *(n=2)*	1	*(50%, 0)*	1	*(50%, 0)*
US *(n=4)*	1	*(25%, 0)*	3	*(75%, 1)*
Totals *(n=34)*	**20**	***(59%, 1)***	**14**	***(41%, 5)***

As noted earlier, it appears that some investor capital was being attracted away from hospital companies

during the early stages of the pandemic, resulting in a decline in the market attractiveness of hospital equities. Of the 14 companies that experienced an increase in share value, it is notable that about one-third of those increases were statistically significant. Of those significant increases, one in the US may influence that observation with that of Community Health Systems, which saw its stock price more than quadrupled during the first half of 2021 due to non-operating gains arising from debt repayment and asset sales that improved the company's market outlook (SEC, 2021). Similarly, Apollo Hospital Enterprises in IndoAsia gained significant favor in the Mumbai stock exchange due to expansions of capacity and expectations of greater profitability post-COVID (Business Standard, 2021). Other significant increases were in small fractions of a dollar (less than ten cents in US Currency) increments on hospital companies that attracted investors due to favorable income projections expected in 2022.

Of the 20 companies experiencing a decrease in share prices during the pandemic, only nine experienced increases in EBITDA profits, and only two had RoE increases. These observations further illuminate the hypothesis that changes in investor preferences for hospital stocks were likely explanations for this observed change from the pre-pandemic to the pandemic period.

Discussion

Initially, the observed changes in revenues and profits seemed suspect, as the COVID-19 pandemic began in Q4 of 2019 and escalated to its worst point in Q3 and Q4 of 2020. However, upon closer examination, it appears the minimums for revenues and EBITDA were associated with the point in time when many hospital systems were cutting off elective surgeries to free up capacity for expected surges in COVID-19 patient volumes. In addition to the cancellation of elective procedures and hospital capacity concerns, patients may have foregone care for minor illnesses or other non-COVID-related care they otherwise would have received, at least in the United States (Cox et al. 2021). Given the increased caseload predictions, hospitals may have eliminated more elective procedures than necessary in their effort to create a surge capacity for the coming waves. This calm before the storm, so to speak, represents the minimums seen in Q2 of 2020. Despite the economic toll of the pandemic in the subsequent quarters, hospitals saw more and more COVID-19 patients and were thereby reimbursed for hospitalizations and related services, hence the increase in revenue. Finally, the maximums enjoyed in Q2 of 2021 may be the result of procedure volumes returning to pre-pandemic levels along with the resolution of pent-up demand from services deferred during the height of the pandemic. It remains to be seen, as COVID-19 variants overtake the ancestral strain and vaccine efficacy wanes, whether revenues will remain at their Q2 highs or will be diminished as pent-up elective service demands are met.

Future Considerations

Our study faced several limitations. As per our data gathering method via Bloomberg, we recognized that several major privately-owned and publicly-traded hospital groups were omitted from our source list. Also, some regions did not have significant representation of publicly traded investor-owned hospital companies and so were consistently excluded from our search. Additionally, since public reporting requirements among countries and regions may differ, the consistency of data needed for greater depth of analysis was not readily obtained. Some limited missing data items (such as share prices) were obtained through individual hospital group investor relations resources. Additional details on actual case volumes within each hospital company during the study period would add great robustness to the analysis but were not found in data sources used for this work.

Conclusion

Generally, the impacts of the COVID -19 pandemic on private, investor-owned hospitals around the world are mixed. Of the four variables examined in this brief, about half of hospital companies experienced declines in revenues and profitability while about half saw improvements in those same metrics. Strong associations were noted between revenues and EBITDA performance with about 70% of hospitals seeing an increase in this metric also saw growth in revenues. The opposite relationship was also true for declines in profit being explained by declining revenues. Revenue growth during the pandemic appeared linked to greater case volumes and external subsidies, while declines appeared as a result of displacing higher-priced elective cases for longer-stay, lower unit revenue COVID-19 care. Considering the length of stay for a COVID-19 patient could be both longer and more resource-intensive, the ability of hospital companies to generally maintain or improve EBITDA profitability suggests that patient

volumes increased while revenues at least kept pace with expense. Movements of equity investment out of hospitals into other sectors appeared to have somewhat of a mixed effect on observed levels for Return on Equity and share prices for these companies.

The observations in this exploratory study leave room for considerable research, quantitative and qualitative, for evaluating the efficacy of investor-owned facilities in sustainably meeting hospital care needs on a global scale.

References

Business Standard. (2021). Apollo Hospitals rallies 20% in 4 days on strong Q2; stock hits new high. https://www.business-standard.com/article/ markets/apollo-hospitals-rallies-20-in-4-days-on-strong-q2-stock-hits-new-high-121111700194_1.html

Cox, C., Amin, K., & Kamal, R. (2021, March 22). How have health spending and utilization changed during the coronavirus pandemic? Peterson-KFF Health System Tracker. Retrieved December 7, 2021, from https://www.healthsystemtracker.org/chart-collection/how-have-healthcare-utilization-and-spending-changed-so-far-during-the-coronavirus-pandemic/.

Ekmeil, F. A. R., & Abumandil M. S. S.(2020). The Effect Of Market Structure And Financial Ratios On Financial Performance In Palestinian Private Hospitals During Coronavirus Disease, Covid-(19). European Journal of Molecular & Clinical Medicine, 7(6), 669-676.

Enumah, S. J., & Chang, D. C. (2021). Predictors of Financial Distress Among Private U.S. Hospitals. The Journal of surgical research, 267, 251–259. Advance online publication. https://doi.org/10.1016/j.jss.2021.05.025

Jeurissen, P.P.T. (2010, May 27). For-profit Hospitals: A comparative and longitudinal study of the for-profit hospital sector in four Western countries. Erasmus University Rotterdam. Retrieved from http://hdl.handle.net/1765/40394

Khullar D, Bond AM, Schpero WL. COVID-19 and the Financial Health of US Hospitals. *JAMA*. 2020;323(21):2127–2128. doi:10.1001/jama.2020.6269

Klebnikov, S. and Hansen, S. Stocks Plunge Up To 9%, Triggering Trading Halt, As Coronavirus Causes Unprecedented Volatility On Wall Street. Forbes, March 18, 2020; https://www.forbes.com/sites/sergeiklebnikov/2020/03/18/stocks-plunge-7-triggering-trading-halt-as-coronavirus-causes-unprecedented-volatility-on-wall-street/?sh=d7fbfc0190b7

Kruse, F. M., & Jeurissen, P. P. T. (2020). For-profit hospitals out of business? Financial Sustainability during the COVID-19 epidemic emergency response. International Journal of Health Policy and Management. https://doi.org/10.34172/ijhpm.2020.67

Kruse, F. M., Stadhouders, N., Adang, E., Groenewoud, S., & Jeurissen, P. P. T. (2018). Do private hospitals outperform public hospitals regarding efficiency, accessibility, and quality of care in the European Union? A literature review. The International Journal of Health Planning and Management, 33(2), e434–e453. https://doi.org/10.1002/hpm.2502

Rees, E. M., Nightingale, E. S., Jafari, Y., Waterlow, N. R., Clifford, S., B Pearson, C. A., Group, C. W., Jombart, T., Procter, S. R., & Knight, G. M. (2020). COVID-19 length of hospital stay: a systematic review and data synthesis. BMC medicine, 18(1), 270. https://doi.org/10.1186/s12916-020-01726-3

Rosko, M., Wong, H. S., & Mutter, R. (2018). Characteristics of high- and low-efficiency hospitals. Medical Care Research and Review, 75(4), 454-478. https://doi.org/10.1177/1077558716689197

Securities and Exchange Commission. Form 8-K, Community Health Systems Inc.; October 27, 2021. https://chsnet.gcs-web.com/node/21476/html

Tenas, J., & Arimany-Serrat, N. (2016). Do Catalan private hospitals enjoy financial health? Intangible Capital, 12(1), 198-222. doi:http://dx.doi.org/10.3926/ic.692

Visser, J. (2020). STRUGGLING AMID A PANDEMIC: South Africa's listed hospitals have seen steep declines in their share prices. What is the outlook for them as the coronavirus rips through the country? Finweek, 28–32.

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