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IMPACT OF COVID-19 PANDEMIC ON THE FINANCIAL PERFORMANCE OF HEALTHCARE FIRMS LISTED ON THAILAND STOCK EXCHANGE

Abstract:

Healthcare services in Thailand are profoundly promoted and aimed to be Asia's capital of health and wellness since 2015. Revenues from medical tourists accelerated growth in the private hospitals, many of those are listed on the stock exchange. During the COVID-19 pandemic, economic activities including travel and tourism, were brought to a halt resulting in a decline in the number of medical tourists. However, domestic demand for medical services significantly increased. This paper investigates how healthcare firms listed in Thailand stock market perform before and during the pandemic. Panel data during the year 2015 – 2018 represents pre-pandemic period and the year 2019 – 2022 represents pandemic period. Data from financial reports was analyzed using pooled ordinary least square (OLS) regression. Effects of firms' operation towards their financial performance before and during the pandemic are examined.

Keywords:

Financial Performance, Financial Ratio, Healthcare Sector, the Stock Exchange of Thailand, COVID-19 pandemic

JEL Classification: F65, L25, L80

Impact of COVID-19 Pandemic on the Financial Performance of Healthcare Firms listed on Thai Stock Exchange

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Abstract

Healthcare services in Thailand are profoundly promoted and aimed to be Asia's capital of health and wellness since 2015. Revenues from medical tourists accelerated growth in the private hospitals, many of those are listed on the stock exchange. During the COVID-19 pandemic, economic activities including travel and tourism, were brought to a halt resulting in a decline in the number of medical tourists. However, domestic demand for medical services significantly increased. This paper investigates how healthcare firms listed in Thai stock market perform before and during the pandemic. Panel data during the year 2017 – 2019 represents pre-pandemic period and the year 2020 – 2022 represents pandemic period. Data from financial reports was analyzed using pooled ordinary least square (OLS) regression. Effects of firms' operation towards their financial performance before and during the pandemic are examined.

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Introduction

Thailand has positioned itself as a medical hub in the region since 2015, where most of its revenue from medical tourists accelerated growth in the private hospitals. In 2019, Thailand was ranked the sixth for the quality of healthcare services by the US magazine CEOWORLD. Despite the promising outlook, the sector was significantly affected by the COVID-19 pandemics, private hospitals encountered significant decreases in revenue from medical tourists due to the travel restriction and the country lockdown. Kasikorn Research Center reported that the number of medical tourist arrivals declined by some 90% in 2021. Nevertheless, both public and private hospitals had put their best effort to handle the situation and this resulted in a high Global COVID-19 Index (GCI) scores and put Thailand on the top of the global chart as an example of best practices in tackling the ongoing global pandemic on 28 July 2020. Moreover, one of the private hospitals listed in the Stock Exchange of Thailand was ranked top 100 world's best hospitals in the year 2020.

This study aims to examine the financial performance of 22 healthcare companies listed in the Stock Exchange of Thailand and investigate its relationship with firm financial ratio before and during the pandemic period (period between year 2017 to 2019 and between year 2020 to 2022)

Literature Review

Firm financial performance is used as a tool measuring a firm current and potential growth. Financial ratio analysis can help investors in making investment decision and predicting firm's future performance. Firms in healthcare sector are no different (Turner et al., 2015). The

essential financial ratio are profitability ratios, liquidity ratios, efficiency ratios, leverage ratios and market value ratio.

1) Profitability ratios

Healthcare sector is an industry with a heavy burden its assets to produce patient care and related services. Therefore, how much a firm can earn from its controlling assets is the key measure to assess its financial viability. Many studies on firms in healthcare industry have used ROA as a proxy for firm performance (Batrancea, 2021; Burkhardt, and Wheeler, 2013; Niresh and Thirunavukkarasu, 2014). This ratio is critical because a firm must generate a return from its investments that is at least equal to the cost of financing those investments. The inability to achieve a return on investment that is equal to or greater than the firms cost of funds will eventually result in the failure of the firm. These ratios measure a company's ability to generate income relative to revenue, balance sheet assets, operating costs, and equity. These ratios are used not only to evaluate the financial viability of a company but are essential in comparing to the others in the industry.

2) Liquidity ratios

These measures determine a firm's ability to pay off current debt obligation without raising external capital. These ratios indicate the amount of liquidity to cover debts and provide a broad overview of a company financial health. Quick Ratio is selected as a proxy of firm's liquidity. The quick ratio is an indicator of a company's short-term liquidity position and measures a company's ability to meet its short-term obligations with its most liquid assets. Batrancea (2021) provides empirical evidence showing the current liquidity ratio, quick liquidity ratio, and debt to equity ratio significantly influenced company performance measured by return on assets, gross margin ratio, operating margin ratio, earnings before interest, tax, depreciation, and amortization.

3) Efficiency ratios

The efficiency ratio indicates a company's ability to use its assets and manage its liabilities to generate sales. They measure the time a company takes to generate cash or income from a client or by liquidating inventory. This paper uses asset turnover for efficiency ratio. This measures the efficiency of a company's use of its assets in generating sales revenue or sales income to the company. Warrad and Al Omari (2015) suggest that Companies with low profit margins tend to have high asset turnover, while those with high profit margins have low asset turnover.

4) Leverage ratios

Leverage ratios measure the amount of capital that comes from debt. These ratios are used to evaluate a company's debt levels (borrowed capital). They express the degree to which a company's operations are funded by debt. In this paper, the leverage ratio is calculated by dividing the weight of the total liabilities by Total Asset. The ratio is also known as the debt ratio (Abubakar, 2015). The higher a company's debt-to-total assets ratio, the more it is said to be leveraged.

5) Market Value ratio

Market value ratios are used to evaluate the current share price of a publicly held company's stock. These ratios track the financial performance of public companies to understand their position in the market. These ratios are employed by current and potential investors to determine whether a company's shares are over-priced or under-priced. Price to Book Value Ratio (PBV) compares a company's book value to its market value. According to Indrarini et al. (2019) company value is investors' perception on managers in managing the resources

company is used by investors as a reference in monitoring the company's performance in the future.

6) Firm Size

Company size is the size of the company seen from the value of equity. The size of the company will determine investor confidence. With the size of the company, it will be known to the public and it will be easier to get company information which will have an impact on the company value (Niresh and Thirunavukkarasu, 2014). Rababah et al. (2020) studies the effect of the COVID-19 pandemic on Chinese listed firms using pooled ordinary least square (OLS) regression and found that the small- and medium- size companies are most affected by this pandemic.

Data and Methodology

The population of this study consists of all twenty-two (22) firms listed in healthcare sector, the Stock Exchange of Thailand (SET). This study covers the period of 6 years from 2017 to 2022. The panel data from the year 2017 to 2019 represents the pre–pandemic period and data from the year 2020 to 2022 represents the pandemic period. Financial data of these 22 firms were obtained from Refinitiv Eikon & Datastream. Records of firms with missing data were deleted. As a result, there are 62 records representing financial data of the healthcare firms before the pandemic, and 65 records for the pandemic period.

All variables of each set of data are explained descriptively. For each set of data, correlations between independent variables are derived and pooled ordinary least square (OLS) regression analysis is conducted. ROA is a dependent variable where asset turnover (AT), leverage ratio (LR), quick ratio (QR), price per book value (PBV) and SIZE are independent variables.

Results

Table 1 shows the summary of variables and measurement used in the study. Descriptive statistics relating to the key variables of 22 listed private hospitals are reported in Table 2.

Table 1: Summary of Variables Measurement

Type of Financial Ratio	Abbreviation	Variables	Formula
Dependent Variables			
Profitability	ROA	Return on Assets	$\dfrac{\text{Net Income}}{\text{Total Assets}}$
Independent Variables			
Market Value	PBV	Price to Book Value Ratio	$\dfrac{\text{Stock Price}}{\text{Book Value}}$
Efficiency	AT	Asset Turnover	$\dfrac{\text{Net Sales}}{\text{Total Assets}}$
Leverage	LR	Leverage Ratio	$\dfrac{\text{Total Liabilities}}{\text{Total Assets}}$
Liquidity	QR	Quick Ratio	$\dfrac{\text{(Current Assets – Inventory)}}{\text{Current Liabilities}}$
Size of Firm	SIZE	Total Asset	LN (Total Asset)

The results show that during the pandemic period, the average ROA of surveyed companies is 10.591%, which is higher than the average ROA before the pandemic (7.732%). The average total asset, asset turnover (AT), leverage ratio (LR) and quick ratio (QR) during the pandemic are also higher than the average of these financial ratio before the pandemic. However, the results confirm the lower average PBV of firms during the pandemic (3.7384) than those before the pandemic (3.3105). This is due to the global economic and financial crises during the pandemic and stock market respond immediately to this event (Panyahometh, 2020; Khanthavit, 2020). Table 2 also shows the minimum, maximum, and standard deviation value for each variable.

Table 2: Descriptive Statistics

Period	Variables	N	Minimum	Maximum	Mean	Standard Deviation
Before the Pandemic	ROA	62	-3.60%	22.3%	7.732%	5.4462%
	PBV	62	1.43	8.86	3.7384	1.91590
	AT	62	.171	1.510	.67215	.282433
	LR	62	.086	.567	.31266	.126166
	QR	62	.260	4.740	1.55894	1.386725
	Total Asset	62	472.6	133,662.0	13,085.197	27,508.9663
	SIZE	62	6.16	11.80	8.4391	1.38289
During the Pandemic	ROA	65	-3.60%	42.4%	10.591%	10.0910%
	PBV	65	1.25	9.33	3.3105	1.58894
	AT	65	.172	1.590	.68151	.298331
	LR	65	.121	.754	.33236	.158999
	QR	65	.180	4.880	1.74402	1.298195
	Total Asset	65	525.0	141,543.0	15,927.643	28,387.4609
	SIZE	65	6.26	11.86	8.7323	1.39194

Table 3: Correlation Matrix

Period	Variables	ROA	PBV	LR	QR	SIZE	AT
Before the Pandemic	PBV	.620**	1.000				
	LR	-.436**	.114	1.000			
	QR	.628**	.233	-.703**	1.000		
	SIZE	.076	.364**	.504**	-.265*	1.000	
	AT	.373**	.276*	-.299*	.395**	-.504**	1.000
During the Pandemic	PBV	.368**	1.000				
	LR	-.277*	-.087	1.000			
	QR	.260*	.035	-.777**	1.000		
	SIZE	-.125	.376**	.388**	-.370**	1.000	
	AT	.655**	.202	-.432**	.491**	-.521**	1.000

Table 3 shows the strength and direction of the relationship between variables. The Pearson correlation coefficients are significant at the 0.01 level between dependent variable (ROA) and independent variables (PBV and AT) for both periods. Correlations between ROA and QR are significant at 0.01 before the pandemic and at 0.05 level during the pandemic. Similar correlation

but in the negative direction is found between ROA and LR. There is no correlation more than 0.75 between all dependent variables (PBV, LR, QR, SIZE and AT).

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.835	.697	.670	3.1306%	1.972
2	.717	.515	.474	7.3215%	2.044

Note   *Predictors: (Constant), AT, QR, PBV, LR, SIZE*
      Dependent Variable: ROA
      ** and * represent p < 0.01 and p< 0.05, respectively.

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1260.519	5	252.104	25.723	.000**
	Residual	548.836	56	9.801		
	Total	1809.355	61			
2	Regression	3354.292	5	670.858	12.515	.000**
	Residual	3162.683	59	53.605		
	Total	6516.974	64			

Note   *Predictors: (Constant), AT, QR, PBV, LR, SIZE*
      Dependent Variable: ROA
      ** and * represent p < 0.01 and p< 0.05, respectively.

Model 1 represents the regression model of studied variables before the pandemic period (Year 2017-2019) whereas model 2 represents the model during the pandemic (Year 2020-2022). The adjusted R Square value in the Table 4 clearly tells us that 67.0% of variation in the dependent variable (ROA) is explained by the explanatory variables before the pandemic period, while the explanatory variables can only explain ROA by 47.4 % during the pandemic. Table 5 shows the results of the ANOVA technique applied to test significance of the model. The values clearly indicate that both model 1 and model 2 are significant at 0.01 level (Sig. 0.000 < 0.01).

Table 6: Estimation of Parameters for ROA

Model	Parameters	Unstandardized Coefficients		Standardized Coefficients	t	Sig	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.290	4.141		-.795	.430		
	PBV	1.372	.285	.483	4.808	.000**	.538	1.860
	LR	-17.155	5.228	-.397	-3.281	.002**	.369	2.708
	QR	.949	.461	.242	2.061	.044*	.394	2.541
	SIZE	.935	.459	.237	2.038	.046*	.399	2.508
	AT	2.803	2.035	.145	1.378	.174	.487	2.055
2	(Constant)	-19.028	9.709		-1.960	.055		
	PBV	.793	.734	.125	1.081	.284	.616	1.625
	LR	-8.287	9.477	-.131	-.874	.385	.369	2.711
	QR	-1.044	1.175	-.134	-.888	.378	.360	2.779
	SIZE	1.619	.978	.223	1.655	.103	.452	2.214
	AT	25.572	4.409	.756	5.799	.000**	.484	2.066

Note   *Predictors: (Constant), AT, QR, PBV, LR, SIZE*
      ** and * represent p < 0.01 and p< 0.05, respectively.

Table 6 shows the regression equation in Model 1 and Model 2. The results of the ANOVA technique applied to test the significance of each parameter. Before the pandemic (Model 1), PBV ($p=0.000 < 0.01$), LR ($p=0.002 < 0.01$), QR ($p=0.044 < 0.05$), and SIZE ($p=0.046 < 0.05$) have significant impact on ROA. Asset Turnover (AT) is not significant with ROA. However, during the pandemic (Model 2), the AT is the only parameter that is significant to ROA while the other parameters are no longer significant with ROA.

The Model is $ROA = \beta_0 + \beta_1 PBV + \beta_2 LR + \beta_3 QR + \beta_4 SIZE + \beta_5 AT + \varepsilon$.

Model 1: Before the COVID-19 pandemic
　　　ROA = -3.290 +1.372 PBV -17.155 LR + 0.949 QR + 0.935 SIZE + 2.803 AT

Model 2: During the pandemic
　　　ROA = -19.028 + 0.793 PBV - 8.287 LR - 1.044 QR + 1.619 SIZE + 25.572 AT

Conclusion

During the COVID-19 pandemic, economic activities were brought to a halt affecting firms' operation in all sectors including healthcare sector. The studies examined financial performance of healthcare firms listed in the Stock Exchange of Thailand and its relationship with essential financial ratios namely, efficiency ratio, leverage ratio, market ratio and liquidity ratio before and during the pandemic (the period 2017-2019 and 2020-2022). The results suggest that on average, listed healthcare firms have higher ROA during the pandemic than before the pandemic. Before the pandemic, firms with a higher price per book value had higher ROA. The firm's financial performances were positively and highly related to market and liquidity ratio, but negatively related to leverage ratio. However, the result shows no relationship between financial performance with those ratios during the pandemic. The only ratio that is positively related to financial performance is asset turnover. This suggests that during the pandemic, firms that outperform the other are those who can effectively utilize their assets.

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