The Profitability of Technical Trading for Hotel Stocks Under COVID-19 Pandemic

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Abstract. In the real world, investors believe that they can receive more returns for trading stocks by utilizing technical analysis. However, due to the seriously worldwide breakout of COVID-19 from 2020, investors are not sure if they could outperform the market by applying the technical trading rules during this severe period. Thus, we conduct this study to investigate the profitability of stock trading with the use of technical indicators under COVID-19 pandemic. By trading the constituent stocks of Hotel Stock 20 Index (HSI 20) whose stock prices seem considerably declined after the outbreak of COVID-19, we discover that most of the trading rules utilized in this study fail to beat the market in the first half of the year 2020. The findings of this study may shed light on that investors should adopt technical trading rules with care when stock markets are severely affected by black swan events, such as COVID-19. We argue that the above issue would be rather impressive not only for market participants to avoid losses, even make profits, but also for the existing literature due to the rare discussion in the past.

Keywords: hotel stocks, COVID-19, technical trading rules, stock markets, technical indicators

1   Introduction

Based on the efficient market hypothesis (EMH), stock prices seem difficult to be predicted because all of the available information is fully reflected in the markets [1-2]. However, studies show that many stock markets may not follow this rule. For instance, most of the investors who are trading in the actual stock market do not believe that the market is completely efficient [3]. Therefore, they would like to take additional risks and effort to do better than the market to receive more returns by screening stocks [4]. Moreover, some market participants, such as high frequency traders and hedge funds, beating the market consistently is a good indication that the efficient market hypothesis may not be just right [5]. Even further, technical trading rules consistently generate statistically significant profits in several commodity markets [6]. In sum, technical trading rules widely explored in the real world seem to challenge the well-known market efficiency hypothesis [7].

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When reviewing the history, there are several black swan events occurred, which result in severe damage for the worldwide stock markets. As the year of 2020, the eruption and diffuseness of novel coronavirus (COVID-19) disease have seriously affected people's production and life in general [8]. As a rare and unprecedented event, this pandemic has influenced many countries and regions around the world since January 2020 [9]. In fact, the rapid spread of the new COVID-19 pandemic causes an extraordinary shutdown of stock market returns and increases economic uncertainty globally [10]. The shock to the worldwide economy from COVID-19 has been more rigorous and markets have become volatile [11]. In essence, the panic caused by COVID-19 affects the stock return negatively through the updating of market risk premium channel [12].

As mentioned in the beginning, the EMH has been challenged because investors may obtain abnormal returns for trading stocks by employing technical trading indictors. However, due to the spread of the COVID-19 pandemic, investors may suspect whether they can outperform the markets as usual by utilizing technical analysis. This issue deeply arouses our interest and motivation to conduct this study to find the answers to this puzzle. With the survey for the relevant studies related to technical trading, we discover that Moving Average (MA), Stochastic Oscillator Indicators (SOI), Relative Strength Index (RSI), Bollinger Bands (BBs), and KD lines are often employed by the technical proponents for trading stocks [13-18]. Additionally, since the tourism and catering industries have been affected by COVID-19 pandemic seriously [19], we then explore whether investors can still beat the market for trading the stocks of hotel industry according to the trading signals emitted by these technical indicators during this period. In other words, the purpose of this study is to examine whether there are appropriate technical trading rules for trading the US hotel stocks (i.e., the constituent stocks of HSI 20) under COVID-19 pandemic.

In this study, we illustrate several essential findings. First, aside from KD, all of the trading rules employed in this study fail to beat HSI 20 in the first half of 2020 due to the severe impact by COVID-19. This finding shows that technical indicators might not help for stocks trading during the period of pandemic. Second, when observing the performance of cumulative abnormal returns for day 5 (i.e., CAR(5)), we reveal that the performance of employing the KD trading rule would be better than those of using other trading rules. Therefore, we suggest that investors might trade the constituent stocks of HSI 20 when the buying signals emitted by KD.

Besides, this study would contribute to the existing literature in several aspects. First, we endeavor to find whether investors can outperform the market by trading the US hotel stocks during the period of COVID-19, which seems rarely concerned in the relevant studies. Second, to the best of our knowledge, this is the first study trying to propose appropriate trading rules for trading the US hotel stocks during this severe time. By employing the appropriate technical rule revealed in this study, we might provide valuable information for market participants to trade the constituent stocks of HSI 20 under the period of COVID-19. Third, we argue that the issues explored in this study would be concerned by investors since their wealth might be extremely impacted if they hold lots of stocks, especially the US hotel stocks.

The remainder of this paper is organized as follows. Introduction for diverse technical trading rules are presented in Section 2. Section 3 shows the empirical results and analysis. Section 4 provides the conclusion.

2 Introduction for Diverse Technical Trading Rules

Since the trading rules triggered by MA, SOI, RSI, BB, and KD are often adopted by the technical proponents for trading stocks, we introduce these technical indicators in sequence in this section.

2.1 Trading Signals Triggered by Moving Average (MA)

As revealed by studies, the golden or dead crosses generated by Moving Average (MA) trading rules can forecast the prices of future stock [20]. In other words, MA trading rules can predict future prices based on the former price patterns [16]. As a matter of fact, institutional investors often show excellent performance when MA trading rules are used to trade the emerging stock markets [21]. As for the model, the n-day simple MA model is presented as below.

$$MA_{t,n} = \frac{1}{n} \sum_{i=t-n+1}^{t} P_i. \tag{1}$$

Where $MA_{t,n}$ represents the n-day moving average at time t, and Pi denotes the closing price at time t.

Under the MA trading rule, the golden cross appears when the short-term MA (SMA) increases beyond the long-term MA (LMA). This phenomenon indicates the end of the downward trend and the start of the new upward trend. On the contrary, the dead cross occurs as the SMA drops below the LMA, indicating the end of the upward trend and the start of the new downward trend. Thus, since these crosses are regarded as the signals for stock trading, market participants who are familiar with technical analysis may trade stocks when the golden cross or dead cross arises.

Besides, the definitions of the golden and dead crosses are presented as follows.

$$\text{The golden cross is: } SMA_t > LMA_t \text{ and } SMA_{t-1} < LMA_{t-1}. \tag{2}$$

$$\text{The dead cross is: } SMA_t < LMA_t \text{ and } SMA_{t-1} > LMA_{t-1}. \tag{3}$$

2.2 Trading Signals Triggered by Stochastic Oscillator Indicators (SOI)

Studies report that trading stocks following the trading signals emitted by Stochastic Oscillator Indicators (SOI) would enhance the trading performance [22]. In fact, many institutional investors profit by trading stocks according to the trading signals triggered by SOI indicators [23].

SOI, such as K and D, are quite sensitive to the update in the stock price, which may result in K and D values being modified owing to the changes in the highest and lowest prices during a certain period[1]. We present the model of SOI as below.

$$CL_t = P_t - \min(P_t, P_{t-1}, ..., P_{t-8}). \tag{4}$$

$$HL_t = \max(P_t, P_{t-1}, ..., P_{t-8}) - \min(P_t, P_{t-1}, ..., P_{t-8}). \tag{5}$$

$$RSV = \frac{CL_t}{HL_t} \times 100. \tag{6}$$

$$K_t = \frac{2}{3} K_{t-1} + \frac{1}{3} RSV_t. \tag{7}$$

$$D_t = \frac{2}{3} D_{t-1} + \frac{1}{3} K_t. \tag{8}$$

Where CL_t is calculated as the lowest closing price in N recent days reduced by the latest closing price; HL_t denotes to the difference between the highest and the lowest closing price within N days; RSV_t is set as the CL_t over the HL_t; K value is the sum of 1/3 of the RSV value and 2/3 of the K value at lag 1; and D value is the sum of 1/3 of the K value and 2/3 of the D value at lag 1. The oversold signals are occurred as $K \leq 20$ and the overbought signals are emitted as $K \geq 80$. According to the SOI, buying stocks might be recommended when the oversold signals revealed; likewise, selling or short-selling stocks might be suggested as the overbought signals triggered.

2.3 Trading Signals Triggered by Relative Strength Index (RSI)

The Relative Strength Index (RSI) trading rules can yield positive risk-adjusted returns for currency markets [24]. In other words, investors are able to yield higher returns by using the RSI trading rule instead of employing buy-and-hold strategies [25].

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[1] The nine-day K and D values often applied in the real world are employed in this study (i.e., N is set as 9). We would also treat RSV $_{t-1}$ =K $_{t-1}$ for (7) when no prior K is available, and K $_{t-1}$ =D $_{t-1}$ for (8) when no prior D is available.

In general, RSI could be comprised by the basic components which are Relative strength (RS), Average Gain (AG), and Average Loss (AL). The definitions of these components are described as below.

$$RSI = 100 - 100 / (1+RS). \hspace{2cm} \textbf{(9)}$$

$$RS = AG / AL. \hspace{2cm} \textbf{(10)}$$

The first measurements for AG and AL are 14-day averages, which are shown as below.

$$First\ AG = Sum\ of\ Gains\ over\ the\ past\ 14\ days\ /\ 14. \hspace{2cm} \textbf{(11)}$$

$$First\ AL = Sum\ of\ Losses\ over\ the\ past\ 14\ days\ /\ 14. \hspace{2cm} \textbf{(12)}$$

The second, the third, and so on measurements are based on the previous AG or AL and the current gain (CG) or current loss (CL). The models are presented as below.

$$AG = [(Previous\ AG) \times 13 + CG] / 14. \hspace{2cm} \textbf{(13)}$$

$$AL = [(Previous\ AL) \times 13 + CL] / 14. \hspace{2cm} \textbf{(14)}$$

When RSI is 100, it shows that there are upward price movements but without downward price movements. On the contrary, as RSI is equal to 0, it implies that there are downward price movements with no upward price movements. Therefore, the overbought phenomena would happen when the RSI is close to 100 and the oversold circumstances would occur as the RSI is close to 0. By employing 14-day measurement, RSI≥70 and RSI≤30 could be viewed as the overbought and oversold phenomena, respectively.

2.4 Trading Signals Triggered by Bollinger Bands (BBs)

With the function of catching rapid price fluctuations, Bollinger Bands (BBs) is regarded as the most favorite technical indicator based on a sample of over 400 individual currency traders [26]. As a result, most of the financial websites, such as Yahoo and Bloomberg, provide charts of technical analysis for BBs [27].

The BBs is defined as the 2 standard deviation band above and below the n-day MA of historic close prices [28]. This rule assumes that prices will continue to move in the direction of the penetration; that is, penetration of the upper or lower BBs suggests that prices will continue to move higher or lower. However, market contrarians deem that the penetration of the upper or lower BBs indicates an overreaction to price with a strong possibility of trend reversal. In consequence, the selling or buying signal might be emitted.

2.5 Trading Signals Triggered by KD

KD trading rule, combined with the wisdom of MA and SOI, is a momentum strategy that directs the stock price moving to a high or a low point by tracing former KD values. In fact, professional institutional investors, particularly foreign investors, behave consistently with the suggested strategies by the KD trading rule, which are buying signals remitted as K lines upward cross over D lines but selling signals shown when K lines downward cross over D lines [23].

As defined in subsection 2.2, K_t (the trend of K values) and D_t (the trend of D values) are rather similar to SMA and LMA. In essence, K_t and D_t are frequently used as the indicators to decide when to buy or to sell stocks. A buying signal is initiated when K_t crosses up through D_t, whereas a selling signal is revealed as K_t crosses down through D_t. In other words, the buying or selling signals would be emitted as K lines cross over D lines upward or downward in accordance with KD trading rule. In sum, D_t is a trigger point for K_t and the buying as well as the selling signals are defined as below.

$$The\ buying\ signal\ is:\ K_t > D_t\ and\ K_{t-1} < D_{t-1}. \hspace{2cm} \textbf{(15)}$$

$$The\ selling\ signal\ is:\ K_t < D_t\ and\ K_{t-1} > D_{t-1}. \hspace{2cm} \textbf{(16)}$$

3 Empirical Results and Analysis

We use standard event-study methods to examine stock price responses when the buying trading signals revealed by the trading rules employed in this study. We define day 0 as these buying trading signals shown.

Moreover, the abnormal return (AR) is defined as the difference between the actual return and the expected return caused by the market model. We employ HSI 20 as the proxy for market return and evaluate the parameters of the market model by using the data over the period from -155 to -6 days (i.e., 150 days) before the day of these technical buying trading signals shown. In addition, the cumulative abnormal returns at t days (i.e., CAR(t)) are the cumulative abnormal returns from AR(1) to AR(t). We investigate the one-, two-, three-, four-, and five-day CARs when trading signals emitted by these trading rules. Given that investors might hold stocks for a short period, we examine one-, two-, three-, four-, and five-day CARs as a short window as suggested by relevant literature [29-30].

3.1 Descriptive Statistics

We apply the daily data for two stock indices (i.e., S&P 500 and HSI 20) and the constituent stocks of HSI 20 from the Datastream as our samples. Table 1 reports the means, medians, standard deviations, minima, and maxima for the two indices and the constituent stocks over the period of January 2020 to June 2020, the period seriously impacted by COVID-19 for the stock markets.

Table 1. Descriptive statistics (2020/01-2020/06)

Panel A: Indices					
Indices	Number	Mean	S.D.	Min.	Max.
HSI 20	125	3702.818	962.287	2151.210	5254.570
S&P 500	125	2993.281	279.021	2237.400	3386.150
Panel B: The constituent of HSI 20					
HSI20 Constituent stocks of HSI 20	Number	Mean	S.D.	Min.	Max.
1. Apple Hospitality REIT, Inc. (APLE)	125	11.248	3.056	4.840	15.773
2. Chatham Lodging Trust (CLDT)	125	10.261	4.930	3.760	17.843
3. Choice Hotels International (CHH)	125	83.297	14.791	53.373	107.832
4. Diamond Rock Hospitality (DRH)	125	7.049	2.407	2.150	11.020
5. Extended Stay America (STAY)	125	10.855	2.155	6.144	14.569
6. Hersha Hospitality Trust (HT)	125	7.718	3.757	2.402	13.323
7. Hilton Worldwide Holdings (HLT)	125	85.661	17.673	55.940	113.745
8. Host Hotels and Resorts (HST)	125	13.149	2.653	9.060	17.907
9. Hyatt Hotels Corporation (H)	125	64.272	16.465	36.560	92.644
10. InterContinental Hotels Group (IHG)	125	49.960	9.694	27.814	67.445
11. Marriott International (MAR)	125	105.308	27.914	59.080	150.885
12. Park Hotels and Resorts (PK)	125	13.547	6.335	4.668	24.014
13. Pebblebrook Hotel Trust (PEB)	125	16.306	6.238	6.189	26.415
14. RLJ Lodging Trust (RLJ)	125	11.355	3.731	4.270	17.518
15. Ryman Hospitality Properties (RHP)	125	50.075	24.168	13.697	88.837
16. Service Properties Trust (SVC)	125	12.327	7.372	4.163	23.414
17. Summit Hotel Properties (INN)	125	7.469	2.970	2.610	12.056
18. Sunstone Hotel Investors (SHO)	125	10.115	2.143	6.950	13.732
19. Wyndham Hotels and Resorts (WH)	125	45.523	10.939	21.551	61.956
20. Xenia Hotels and Resorts (XHR)	125	12.731	4.633	6.630	20.913

As revealed in Table 1, the HIS 20 index is affected severely by the pandemic due to the higher standard deviation and the broad range between minimum and maximum values. When observing the Diamond Rock Hospitality (DRH) and the Service Properties Trust (SVC), two constituent stocks of HSI 20 index, we find that the maximum stock prices of these two stocks are five times as of the minimum stock prices. As compared with S&P index, the stock prices of some HSI 20's constituent stocks are severely declined due to the negative impact of COVID-19 for the hotel stocks.

Furthermore, we plot the data of S&P 500 and HSI 20 indices as presented in Fig. 1 and Fig. 2. As revealed in the figures, a sharp decline is shown for each of the indices due to the severe impact of stock

markets, such as circuit breaker[2]. In fact, the circuit breaker has happened four times in March 2020 (i.e., 3/9, 3/12, 3/16, and 3/18). Although the Fed implements unlimited quantitative easing (QE) and decreases the interest rate to 0-0.25%, the rebound of the HSI 20 is much lower than that of the S&P 500. This large difference demonstrates that the enterprises of the hotel industry are seriously damaged by COVID-19.
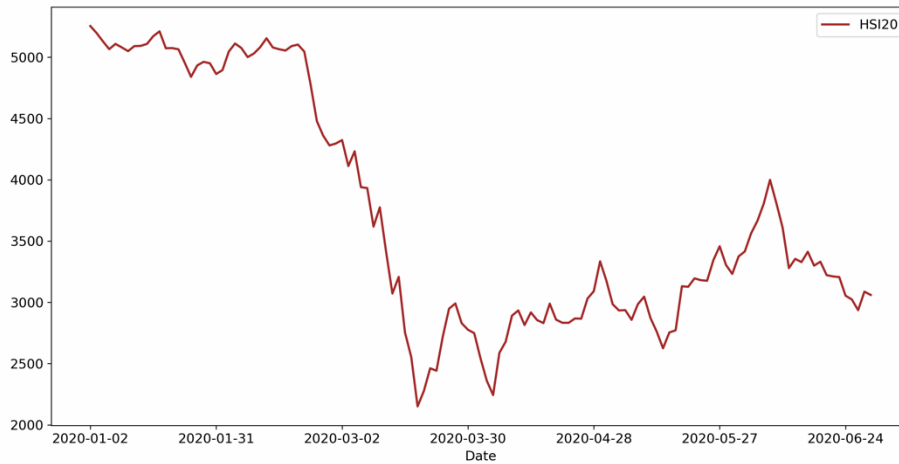

Fig. 1. Trend of Hotel Stock 20 Index (HSI 20) from 2020/01 to 2020/06
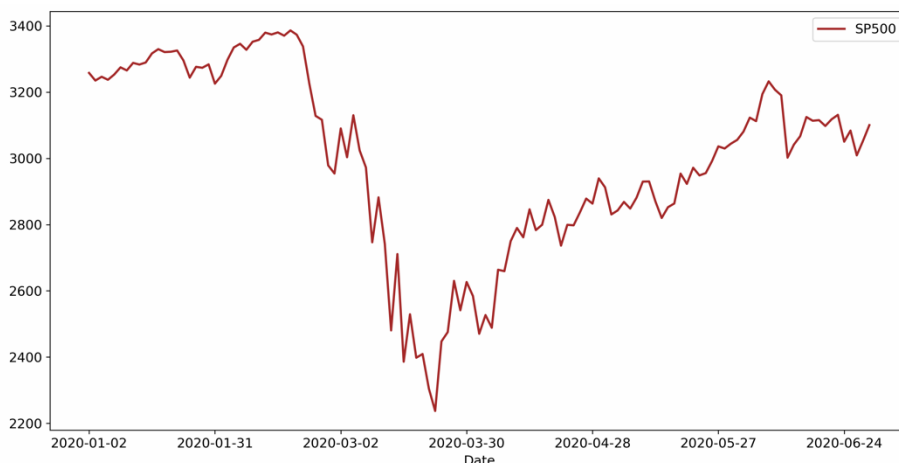

Fig. 2. Trend of S&P 500 from 2020/01 to 2020/06

Besides, we list the samples of buying trading signals for HSI 20 as shown in Table 2 which reports that the numbers are almost above 100, except MA trading rule. For the SOI and RSI, the buying signals emitted are within the range of 400 and 500 over the data period. Therefore, we argue that the results we revealed would be persuasive because these results are derived from enough samples, not only a few.

Table 2. The samples of buying trading signals for HSI 20

Technical trading rules	Numbers of buying trading signals emitted
MA trading rules	75
SOI trading rules	482
RSI trading rules	462
KD trading rules	163
BB trading rules	127

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[2] The benchmark index of circuit breaker for the U.S. stock market is the S&P 500. The circuit breaker would be triggered, while the S& P 500 500 declines 7 % from the previous day's close of S& P 500.

3.2 Empirical Results

According to the trading signals emitted by either SOI or RSI, the buying signal would be occurred when either SOI or RSI falls into oversold zero (i.e., $K \leq 20$ or $RSI \leq 30$). In other words, investors would be suggested to buy stocks as the prices fall into oversold zero defined by SOI and RSI. Similarly, the buying signal would be revealed when stock prices penetrate the lower BBs, which might boost the upward trend.

Table 3 shows that investors fail to beat the market by adopting the trading rules of RSI, SOI, and BBs because of the significantly negative CARs shown in Panel B, C, and D. This finding implies that employing contrarian strategies might not be appropriate for buying the constituent stocks of HSI 20 during the first half of 2020. We infer that, to some extent, the constituents of HSI 20 might be overshot. Consequently, the buying signals emitted by these trading rules might not be effective during this period.

We also employ the buying signals emitted by MA and KD trading rules that are based on momentum strategies. According to the MA, the golden cross (i.e., buying signal) emerges when the SMA increases beyond the LMA, indicating the end of the downward trend and the start of the new upward trend. Because K and D are somewhat similar to SMA and LMA, the buying signal is initiated when K crosses up through D based on KD trading rule.

Table 3. ARs and CARs of buying signals emitted by various technical trading rules

Holding days	HIS20			
	ARs	p-test	CARs	t-test
Panel A: MA trading rules (5, 20) MA5 cross over MA 20 (MA GC)				
1	0.58%	0.25	0.58%	0.25
2	-0.05%	0.913	0.52%	0.51
3	-0.73%	0.129	-0.21%	0.822
4	-0.19%	0.741	-0.40%	0.672
5	-0.29%	0.537	-0.68%	0.472
Panel B: SOI trading rule $K \leq 20$				
1	-1.45%	0.002***	-1.45%	0.002***
2	-1.15%	0.015**	-2.61%	0***
3	-0.89%	0.065*	-3.49%	0***
4	-0.98%	0.041**	-4.47%	0***
5	-1.13%	0.018**	-5.59%	0***
Panel C: RSI trading rule $RSI \leq 30$				
1	-1.25%	0.015**	-1.25%	0.015**
2	-0.92%	0.077*	-2.17%	0.004***
3	-0.65%	0.21	-2.82%	0.004***
4	-0.49%	0.341	-3.31%	0.004***
5	-0.20%	0.696	-3.50%	0.007***
Panel D: BB trading rules BB cross low				
1	-1.55%	0.012**	-1.55%	0.012**
2	-4.42%	0***	-5.98%	0***
3	-0.89%	0.351	-6.87%	0***
4	-1.22%	0.147	-8.09%	0***
5	-1.65%	0.099*	-9.74%	0***
Panel E: KD trading rule K cross over D (KD GC)				
1	0.93%	0.117	0.93%	0.117
2	1.21%	0.055*	2.14%	0.041**
3	-0.31%	0.56	1.83%	0.148
4	-0.80%	0.06*	1.03%	0.411
5	-0.23%	0.589	1.21%	0.352

Note. We investigate whether these ARs and CARs including one-, two-, three-, four-, and five-day CARs would be different from zero if investors take the long positions on the constituent stocks of HIS 20 as the buying rather than selling signals emitted by MA, RSI, SOI, BB, and KD. We also present the statistics of t tests for these CARs. In addition, *, **, and ** represent 10%. 5% and 1% significance levels, respectively.

Table 3 also presents that CARs are positive for trading these constituent stocks only for KD trading

rules. Besides, the AR(1) for employing MA and the AR(1) as well as AR(2) for adopting KD are positive. We infer that the above circumstances would be regarded as the bounded phenomena instead of upward trend situations after buying signals emitted by either MA or KD trading rules.

Since COVID-19 might negatively impact on stock markets, we claim that investors seem difficult to outperform the market by utilizing the trading rules employed in this study. However, the revealed result shows that investors had better hold such stocks for a very short period of time, for example one day or two days, after the buying signals emitted by MA and KD. However, when held these stocks to five days, investors would start to have positive buy and hold returns according to the KD trading rule only.

3.3 Further Investigation by Employing BHR for Robustness

For the robustness of this study, we make further investigation by measuring the buy and hold returns (BHR)[3] from day 1 to day 5 after the buying signals emitted by the trading rule of MA, SOI, RSI, BB, and KD. We then reveal that the results of BHR are similar to those of CARs. Table 4 reports that investors had better hold such stocks for a very short period of time, for instance one day or two days, after the buying signals emitted by MA and KD. However, if holding more than two days, investors would have positive buy and hold returns according to the KD trading rule only.

Table 4. BHRs of buying signals emitted by various technical trading rules

Holding days	BHRs	t-test
Panel A: MA trading rules (5, 20) MA5 cross over MA 20 (MA GC)		
1	0.58%	0.25
2	0.58%	0.472
3	-0.16%	0.861
4	-0.48%	0.609
5	-0.87%	0.355
Panel B: SOI trading rule K≤20		
1	-1.45%	0.002***
2	-2.61%	0***
3	-3.49%	0***
4	-4.47%	0***
5	-5.59%	0***
Panel C: RSI trading rule RSI≤30		
1	-1.25%	0.015**
2	-0.92%	0.077*
3	-0.65%	0.21
4	-0.49%	0.341
5	-0.20%	0.696
Panel D: BB trading rules BB cross low		
1	-1.55%	0.012**
2	-4.42%	0***
3	-0.89%	0.351
4	-1.22%	0.147
5	-1.65%	0.099*
Panel E: KD trading rule K cross over D (KD GC)		
1	0.93%	0.117
2	1.21%	0.055*
3	-0.31%	0.56
4	-0.80%	0.06*
5	-0.23%	0.589

Note. We investigate whether these BHRs including one-, two-, three-, four-, and five-day BHRs would be different from zero if investors take the long positions on the constituent stocks of HIS 20 as the buying rather than selling signals emitted by MA, RSI, SOI, BB, and KD. We also present the statistics of t tests for these BHRs. In addition, *, **, and ** represent 10%. 5% and 1% significance levels, respectively.

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[3] We employing the buy and hold returns (BHR) instead of buy and hold abnormal returns (BHAR) since the results of CARs and those of BHARs are almost the same because of the difference between CAR and BHAR: arithmetic versus geometric sums.

4 Conclusion

In the real world, market participants might often take technical trading rules into account as the reference for trading stocks because the proponents believe that they might create more profits by using technical rules to trade stocks. However, since January 2020, the rapid spread of COVID-19 pandemic results in an extraordinary shutdown of stock market returns and increases worldwide economic uncertainty [10]. Unquestionably, the hotel industry is one of the seriously and negatively impacted industries by this pandemic. Therefore, we are aroused to explore the effectiveness of various technical trading rules during this severe time. By applying MA, SOI, RSI, BBs, and KD, we attempt to examine whether there are appropriate technical trading rules for trading the US hotel stocks (i.e., the constituent stocks of HSI 20) under COVID-19 pandemic.

In this study, we reveal several essential findings. First, the trading rules employed in this study, except KD, fail to beat HSI 20 in the first half of 2020 because of the severe impact by COVID-19. This finding shows that technical indicators might not help trading stocks during the period of pandemic. Second, we reveal that the performance of employing the KD trading rule would be better than those of utilizing other trading rules, as observing the performance of cumulative abnormal returns for day 5 (i.e., CAR(5)). Thus, we suggest that investors might trade the constituent stocks of HSI 20 when the buying signals occurred by KD.

We argue that this study would contribute to the existing literature in several aspects. First, we endeavor to find whether investors can outperform the market by trading the US hotel stocks during the period of COVID-19, which seems rarely concerned in the relevant studies. Second, to our understanding, this is the first study trying to propose appropriate trading rules for trading the US hotel stocks during the period of COVID-19. By employing the appropriate technical rule revealed in this study, we might provide valuable information for market participants for trading the constituent stocks of HSI 20 under this severe time. Third, we argue that the issues explored in this study would be concerned by investors since their wealth might be extremely impacted if they hold lots of stocks, especially the US hotel stocks. In other words, this study may contribute to the existing literature by shedding the new light on how to trade these hotel stocks under COVID-19.

Although our revealed results are derived from enough samples and are statistically supported, only employing the data of the first half of the year 2020 would be the limitation of this study. Since history may repeat itself, we believe that exploring more data of black swan events as the further studies would bring out more valuable information that is beneficial for investors to form their investment strategies.

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