Is there a holiday effect on the performance of *Shariah*-compliant stocks compared to non-*Shariah*-compliant stocks on Bursa Malaysia?

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Abstract

This research examines whether the return of the Shariah-compliant portfolio (SCP) relative to the non-Shariah-compliant portfolio (NSCP) is subject to any holiday effect on Bursa Malaysia over the examination period from1 December 2005 to 30November 2017.For this research, a new portfolio (SCP–NSCP) that represented the monthly difference return between the SCPand NSCP is constructed. The regression was conducted by regressing the monthly returns of (SCP–NSCP) on the monthly returns of the Capital Asset Pricing Model (CAPM) factor with dummy variables and then, on the monthly returns of the Fama and French (1993) three-factor model (FF3M) factors with dummy variables.By employing the CAPM and FF3M, the results indicated that the performance of Shariah-compliant stocks relative to non-Shariah-compliant stocks does not subject to any holiday effect on Bursa Malaysia.Thus, there is no difference in the return performance betweenSCP and NSCP.

Keywords *Shariah*;Holiday effect; CAPM;Fama and French (1993) three-factor model (FF3M); Bursa Malaysia.

Abbreviations
SCP: *Shariah*-compliant portfolio.
NSCP: Non-*Shariah*-compliant portfolio.
SCP–NSCP: Monthly difference return between the SCP and NSCP.
CAPM: Capital Asset Pricing Model.
FF3M: Fama and French (1993) three-factor model.

1. Introduction

According to theEfficient Market Hypothesis (EMH), which is proposed by Fama (1970, 1991), the price of the stock fully reflects all available information, whether historical, current, or private and holds that the historical information is unable to forecast the future stock price. Therefore, investors could not achieve superior returns in the market by proficient market timing or stock selection. According to the EMH, the only way that the investor can achieve superior returns is by chance or by buying riskier stocks. However, contradicting the EMH, many anomalies were proved in studies, which help investors to predict the movement of stock prices (Munusamy, 2019; Rashid andKausar, 2019; Chancharat et al, 2020).

The four main anomalies classified by Levy and Post (2005) are (1) anomalies associated with the company, which result from specific characteristics or features in the company such as the size and value effects; (2) anomalies related to accounting, which result after the announcing of accounting information such as profit distribution; (3) anomalies associated with specific events such as the announcement of the company's listing in the main index; and (4) anomalies associated with certain holidays, such as the New Year effect or a specific calendar month effect such as the January effect.The holiday effect somehow is a part of the calendar effect and appears when stock returns in pre-holiday, during the holiday, or post-holiday periods are higher than other periods.

Four main propositions support the existence of the holiday effect. Firstly, investors may close their short-selling positions by buying stocks on the market before a holiday (Chen &Singal, 2003). The second relates to behaviour finance, where investors may experience better moods around holidays and higher optimism about future opportunities that could impact the trading in the market (Thaler, 1999). The third proposition is that, because companies grant their employees bonuses at year-end, a proportion of these bonuses might be invested in the stock markets (Wu, 2013). Fourthly, according to the researcher, anomalies might be caused by the trading of technical analysts.

For example, if traders agree that there is a holiday effect in a stock market, their buying may increase on this holiday. Therefore, prices and returns of stocks may rise due to a high demand which will lead to the existence of the holiday effect.

Abdul-Rahim (2007) argued that investors should be careful in determining the calendar effect since the results may change depending on the model employed.Thus, this study applies theCAPM and FF3Mwith dummy variables to investigate the holiday effect. The CAPM is one of the well-known models in the financial field, which was separately pioneered by Sharpe (1964), Lintner (1965), and Mossin (1966).The CAPM is estimated by investors to determine the risk-adjusted return of an asset by applying the beta coefficient as an adequate risk measure. According to the CAPM, the market risk premium (MRP), which is the market return minus risk-free return, is the only factor that can explain the returns of the portfolios.However, the Fama and French (1993) three-factor model (FF3M)extends the CAPM by including two other factors into the CAPM factor. These factors are (1) the small-cap risk premium (SMB), which represents the difference in return between small-cap stocks and large-cap stocks; and (2) the value risk premium (HML), which represents the difference in return between stocks with high BVTMV (value stocks) and stocks with low BVTMV (growth stocks). The inclusion of these two style-based risk premiums, along with the MRP was found to explain the stock performance much better than using MRP alone.

A thorough search of market anomalies studies yielded no previous studies that examined whether *Shariah*-compliant stocks have a superior return to non-*Shariah*-compliant stocks in periods coinciding with specific religious holidays. Therefore, this study examines whether the return of a *Shariah*-compliant portfolio (SCP) relative to the non-*Shariah*-compliant portfolio (NSCP)is subject to any holiday effect in Bursa Malaysia over the examination period from 1 December 2005 to 30 November 2017. It is worth mentioning that*Shariah* is a body of Islamic religious laws and ethical rules. To be *Shariah*-compliant, an investment portfolio has to comply with *Shariah*, and must not include investments in companies involved in liquor, pork products, gambling, or any other practice deemed immoral.World Bank (2015) and Alam et al. (2020) indicate that the Islamic financial services industry has been growing by 10–12% annually in the last two decades. Also, Ernst and Young (2018) state that the *Shariah*-compliant financial services industry is one of the fastest-growing global financial service industries.

Bursa Malaysia, which is the Malaysian financial market,was chosen for this study as it consists of conventional and Islamic capital markets working in parallel and it is a well-regulated market that offers a wide range of financial and investment facilities with data availability. Several other factors favoured the choice of Bursa Malaysia, including that 29% of the world's *Shariah*-compliant funds are located in Malaysia (Mansor, 2012). Also, it is the only market that offers a full range of facilities for the Islamic money market accompanied by an active secondary market (IFSB, 2020).Moreover, Bursa Malaysia is considered a good choice for Musliminvestors, since the majority of stocks listed in Bursa Malaysia are*Shariah*-compliant. The *Shariah* Advisory Council (SAC) of the Securities Commission Malaysia (SC) in its report on 26 November 2021 shows that out of 948 stocks, there were 751*Shariah*-compliant, and hence, around 79% of stocks listed in Bursa Malaysia are*Shariah*-compliant(SC, 2021a). The total value of the Malaysian capital market is RM 3,564.83 billion –Malaysian currency-, while it is RM 2,302.82 billion for the Islamic capital market in March 2022, and hence, the Islamic capital market represents more than 64% of the Malaysian capital market (SC, 2022).

2. Literature Review

The presence of the holiday effect has been well-documented by many researchers, such as the Eid al-Fitr holiday effect documented by Ali, Akhter and Ashraf (2017); Al-Smadi, Almsafir and Husni (2018); Ali, Akhter and Chaudhry (2021). On the other hand, the Eid al-Adha holiday effect was reported by Chowdhury and Mostari(2015); Ali, Akhter and Chaudhry (2021). The New Year holiday effect was documented by Bergsma and Jiang (2016) and Eidinejad and Dahlem (2021), the Christmas holiday effect was reported by Beladi, Chao and Hu (2016) and Al-Smadi et al. (2018);Eidinejad and Dahlem (2021). While the Chinese New Year holiday effect (CNY) was documented by McGuinness and Harris (2011), Yuan and Gupta (2014), and Chia, Lim, Ong and Teh (2015). However, other studies have concluded that the holiday effect does not exist, such as Borges (2009), Abdul Karim, Abdul Karim and Tang (2012) as well as Chia (2014).

By applying the technique of panel data analysis, Ali et al. (2017) investigated the effects of the holy days of the Muslim community on stock markets in Saudi Arabia, Pakistan, Turkey and Bahrain from January 2001 to December 2014. The authors studied the main indices' returns for these countries, and the main occasions which they selected include Eid Melad-un-Nabi, Eid al-Adha, Eid al-Fitr and others. The available evidence suggested that the stock returns were only positively affected by Eid al-Fitr in all mentioned countries. However, the sample of this research was restricted to a few Asian Muslim countries, so its results could not be generally applied to other countries.

Har and Chih (2016) tested the effect of all federal holidays in Malaysia, which include but are not limited to New Year's Day, the King's Birthday, Christmas Day, Eid al-Fitr, Eid al-Adha, Eid Melad-un-Nabi, the National Day and the Chinese Lunar New Year (CNY). The researchers analysed the main index for Bursa Malaysia from January 2001 to December 2010. After applying the OLS regression, the results only confirmed the existence of the Christmas and CNY effects, while the other holidays did not have holiday effects. Furthermore, Beladi et al. (2016) investigate the Halloween effect on all stocks listed on NYSE, NASDAQ and AMEX over the 1926-2012 examination period. The study proved the existence of the Halloween and Christmas effects, but the effect of Christmas was more significant.

Wu (2013) conducted a unique study to test the CNY holiday effect in markets where the majority of investors are non-Chinese. The author tested the preceding week of the CNY holiday, the week of the CNY holiday and the week following the CNY holiday for the effect on 118 Chinese stocks listed on the NYSE and NASDAQ between January 1993 and December 2011. Based on the study's results after applying the OLS approach, there appeared to be an actual holiday effect, since the returns of the Chinese stock surrounding the CNY were significantly higher during the holiday compared to periods before and after. However, after the returns are adjusted with the American depository receipts returns, the effect of the actual CNY becomes insignificant. Along similar lines, Chia et al. (2015) found a pre-and post-CNY holiday effect in Hong Kong between January 1988 and July 2012 examination period. Teng and Yang (2018) investigated the CNY holiday effect in the stock markets of China, by studying China's four main markets from January 1993 to December 2015. Their results showed that, while the CNY holiday effect exists in Chinese markets, this effect diminished with more foreign investment in the market.

Abdul-Rahim (2007) applied the CAPM and the FF3M with dummy variables to examine the calendar month effect from January 1985 to December 2005 on Bursa Malaysia. The sample was between 220 to 500 stocks. After applying the time series multiple regressions, the results affirmed that the February effect does exist, when applying the CAPM but, when applying the FF3M, the February effect disappeared. Therefore, the difference in the calendar effect results could be due to the various models applied.

Over the examination period from January 2004 to November 2019, Munusamy (2019) apply the ordinary least square (OLS) regression to investigate the Ramadan effect on the *Shariah* index in India. The findings revealed that the returns for the whole month of Ramadan are statistically significant. The findings also showed that the last 10 days had a greater impact than other days. Finally, using GARCH modified models, the study investigated the Ramadan influence on volatility and discovered evidence of the Ramadan effect during the first 10 days of Ramadan month.

Between January 1992 and December 2016, Chancharat et al. (2020) employed the GARCH (1, 1) and EGARCH (1, 1) models to study the holiday effect on the SET index of the Thai stock market. The authors took all holidays announced by the Bank of Thailand during the examination period. The study's statistical findings revealed that return rates are much higher during pre-holidays and post-holidays than on typical days. At a significant level of 1%, Chancharat et al. (2020) discovered that the returns in the pre-holiday period are higher than those in the post-holiday period.

Eidinejad and Dahlem (2021) investigated the holiday effect on the return of the AFGX index in Sweden. The holidays that are included in the study are Walpurgis Night, Midsummer, Ascension Day, Easter, Epiphany, Christmas, and New Year. The examination period is from January 1980 to December 2019. By using the regression-based approach for the whole sample period, the authors found evidence for a post-holiday effect. However, they can't discover any evidence of a pre-holiday influence for any period.

Ali, Akhter, and Chaudhry (2021) aimed in their research to examine the effect of the Islamic holy days on the returns of stock exchanges in Bahrain, Pakistan, Turkey, and Saudi Arabia over the period from January 2001 to December 2014. The chosen holidays are Ashoura, Eid Milad-un-Nabi (SAW), Ramadan, Eid-ul-Fitr, and Eid-ul-Adha. The findings of the Pooled fixed/random effect Panel Regression show that Eid-ul-Fitr is the only Holy Day that has a substantial positive influence on Asian stock returns, whereas the other Holy Days have no effect. The only Gregorian calendar aberration that occurs in Asian markets is Friday. The existence of both Islamic and Gregorian calendar irregularities in Asian markets is supported by these findings.

Other studies, such as Wonget al. (2006), Abdul Karim al. (2012), Chia (2014), Olsonet al. (2015) as well as Kumar (2017), concluded that anomalies decreased over time and that markets begin to become more efficient. Borges (2009) claimed that the anomaly is being affected by data-mining bias, and argued that there is variation in the national characteristics of different countries which do not remain the same over time. Kumar (2017) claimed that calendar anomalies were remarkably present during the 1980s and 1990s, but have substantially decreased in recent times due to the significant advances in information technology which have reduced the cost of obtaining information. Likewise, Caporale and Zakirova (2017) argued that when transaction costs are considered, all anomalies evaporate and the market becomes more efficient. Furthermore, recent research by Shanaev and Ghimire (2021) indicated that numerous calendar anomalies had disappeared throughout the study period from 1926 to 2018. The authors arrived at these conclusions after studying the most 10 well-known stock market anomalies.

The results of the above studies might be inconsistent in showing the existence of the holiday effect. Most of the above studies might involve biases since the authors did not test for the unit root, heteroskedasticity, and autocorrelation biases. To confirm that the regression results of this research are unbiased estimations, tests for unit root, heteroskedasticity, and autocorrelation are conducted on the regression variables with appropriate corrections employed, if one or more of the above biases are detected.

3. Data and Methodology

Data

This study is based primarily on published secondary data that was analysed by adopting the quantitative analytical method. The data was obtained mainly from the database accessed through a subscription from the Taiwan Economic Journal (TEJ). Thisstudy employs monthly data since daily and weekly data contain a large amount of random white noise (Munet al. 2000). The non-*Shariah*-compliant stocks were selected rather than conventional stocks to ensure that all stocks were completely independent since the *Shariah*-compliant stocks are part of the conventional stocks. To determine whether a stock in the database is *Shariah*-compliant or not, this study uses the *Shariah*-compliant securities list report issued by the *Shariah* Advisory Council of the Securities Commission of Malaysia (SC) (for more details seehttps://www.sc.com.my/development/icm/shariah-compliant-securities/list-of-shariah-compliant-securities).Any company registered in this list is considered *Shariah*-compliant, while any company not registered is considered non-*Shariah* compliant. During the study period from 1 December 2005 to 30 November 2017, this report was issued at the end of May and November, except for 2006, when it was issued at the end of April and October.

The religious holidays tested in this research are those considered the most significant, given that Malaysia is a multi-religious and multicultural country. Islam is the official religion in Malaysian society, with a high religious tolerance of other religions, such as Christianity, Buddhism, and Hinduism. As indicated by the Department of Statistics in Malaysia (2021),the population of Malaysia is 32.67 million in the third quarter of 2021. The Bumiputera people, who are referred to as ethnic Malays and are mostly Muslim, are the dominant ethnic group and represent (69.8%) of the population. Ethnic Chinese constitute (22.4%) of the population and are mostly Buddhists, with a Christian minority. The rest of the population, (7.8%), comprises other ethnic groups, including Indians and the Sabah and Sarawak indigenous people. As a result, the federal religious holidays in Malaysia that this research examines are:

- ***Hari Raya Aid ilfitri (*HRAI)**: is called *Eid al-Fitr* in Arabic. It is the festival that ends the fast of the month of *Ramadan* for Muslims. It is one of the most important holidays for the Muslim community and occurs on the 1st of *Shawwal*, the 10th month of the Islamic calendar.

- ***Hari Raya Haji (*HRH*)***: is called *Eid al-Adha* in Arabic. It is the festival of sacrifice and is considered the most important Muslim holiday. It occurs on the 10th of *Dhu al-Hijjah*, the 12th month of the Islamic calendar.
- ***Eid Mawlid al-Nabi (*EMN*)***: is the date that Prophet Mohammad (PBUH) was born. It occurs on the 12th of *Rabi al-Awwal*, the 3rd month of the Islamic calendar.
- **Chinese Lunar New Year (CNY)**: known as the Spring festival, CNY represents the beginning of the new year on the Chinese calendar. It is considered the most important holiday in China and has a significant impact on countries that have a large Chinese population.
- **Christmas Day**: Christmas Day is the day purported to be the birthday of Jesus Christ (PBUH) which, according to Roll (1995),was set by the church as the 25th of December on the Gregorian calendar in the early fourth century.
- **New Year's Day**: New Year's Day is the first day of the year and is celebrated on the 1st of January on the Gregorian calendar.

The HRAI, HRH, EMN, and CNY are observed according to a lunar calendar, and hence, they occur on a different Gregorian calendar date each year. Therefore, the researcher tracked these holidays over the examination period and located them in the relevant months on the Gregorian calendar.

Evaluation Methods

Return Measures: of the several parameters that could be used to measure returns, this research adopts the following measures:

- **Return on Investment (ROI):** The return of a stock is estimated by calculating the return on investment. The ROI for stock *x* in month *t* is obtained directly from the TEJ database.
- **Monthly arithmetic return:** The portfolio's return is evaluated by calculating the monthly arithmetic return. The monthly arithmetic return for portfolio *X* over *T* months is computed as follows in Equation 1:

$$\bar{r}_x = \frac{\sum_{t=1}^{T} r_{x,t}}{T} \quad \text{..... (1)}$$

where:

$r_{x,t}$: is the return of portfolio *X* in month *t*; and

T : is the number of months in the evaluation period.

The test for the holidayeffect is conductedby constructing a new semi-equally weighted portfolio (SCP–NSCP) that represents the monthly difference return between the *Shariah*-compliant stocks and non-*Shariah*-compliant stocks. The rebalance of the (SCP–NSCP) was on 1 June and 1 December immediately after the *Shariah*-compliant lists are published by the SC.Abdul-Rahim (2007) debated that investors should be careful in determining the seasonality effect because the findings may differ from one model to another. Following the methodology of Abdul-Rahim (2007), this research applies two kinds of models, the CAPM and the FF3F. The analysis is carried out using the statistical analysis *STATA12* software, by regressing the monthly returns of the (SCP–NSCP), firstly on the monthly returns of the CAPM factor (MRP) with dummy variables, and then on the monthly returns of the FF3F factors (MRP, SMB, and HML) with dummy variables. The formula for regressing on the CAPM is as follows in Equation 2:

$$(SCP_t - NSCP_t) = a + b_{Spread,m}.MRP_t + d_{Spread,D}.(D_{h,t}) + \varepsilon_{Spread,t} \quad \text{..... (2)}$$

Where,

aa : is the alpha coefficient that represents the abnormal return of the $(\mathrm{SCP_t} - \mathrm{NSCP_t})$;

MRP_t : is the market risk premium in month *t*;

$b_{Spread,m}$: is the factor loading on the MRP, measures the sensitivity of the $(\mathrm{SCP_t} - \mathrm{NSCP_t})$ spread to the movement in the MRP;

$D_{h,t}$: are the dummy variables that take a value of 1 in the selected religious holiday month, otherwise, take a value of 0 during the examination period;

$d_{Spread,D}$: is the factorloading on the holiday dummy variables that measure the sensitivity of the $(\mathrm{SCP_t} - \mathrm{NSCP_t})$ to the selectedreligious holiday; and

$\varepsilon_{Spread\ ,t}$: is the regression error term that represents an unsystematic risk for the $(\mathrm{SCP_t} - \mathrm{NSCP_t})$ spread in month *t*.

On the other hand, the formula for regressing the (SCP–NSCP) on the FF3F is shown in Equation 3:

$$(SCP_t - NSCP_t) = a + b_{Spread\ ,m}.MRP_t + b_{Spread\ ,s}.SMB_t + b_{Spread\ ,v}.HML_t + d_{Spread\ ,D}.(D_{h,t}) + \varepsilon_{Spread\ ,t} \quad (3)$$

Where,

$b_{Spread\ ,s}$: is the factor loading on the SMB, measures the sensitivity of the$(\mathrm{SCP_t} - \mathrm{NSCP_t})$ spread to the movement in the SMB

$b_{Spread\ ,v}$: is the factor loading on the HML, measures the sensitivity of the $(\mathrm{SCP_t} - \mathrm{NSCP_t})$spread to the movement in the HML.

The CAPM and the FF3F are chosen to determine whether these two models are equivalently in explaining the religious holiday effect (if any) on Bursa Malaysia. In seeking to examine on which religious holiday the return of the SCP is significantly higher than the return of the NSCP, the returns of the SCP and the 3-month Islamic interbank rates are employed as a market proxy and risk-free proxy, respectively. To ensure the decrement in the time-series variation, all attributes used to construct the variables in the model are logged before conducting the regression. Moreover, to ensure that the results of this research are unbiased, the following tests were conducted before running the regressions:

1. **The unit root**: if the time-series has unit roots, the time-series is not covariance stationary (DeFuscoet al. 2015, p.516). To test whether the time series has a unit root or not, this research applies the Augmented Dickey-Fuller (1981) test (ADF). The *STATA 12* statistical analysis software presents three kinds of ADF test (1) the ADF with intercept (constant) and trend; (2) the ADF with intercept (constant) only; and (3) the ADF with no intercept (constant) and no trend. The null hypothesis for this test is H_0: the time series has a unit root, whereas the alternative hypothesis of the ADF test is H_1: the time-series has no unit root. Only variables that are statistically significant under the ADF test at a 5% level are accepted in the regression analysis.
2. **The heteroskedasticity**: DeFuscoet al. (2015, p.445) clarify that heteroskedasticity bias occurs once the variance of the error terms changes through the observations. Thus, heteroskedasticity appears when the residuals of the regression in general, grow much larger with each increase in the independent variables' size. Heteroskedasticity could exhibit a statistically significant relationship between variables where there is no relation. To test whether the residuals are heteroskedastic or not, this research applied the Breusch-Pagan (1979) test. The significance of this test is at a 10% level, where the null hypothesis is H_0: the residuals of the regression are not heteroskedastic against the alternative hypothesis of H_1: the residuals of the regression are heteroskedastic.
3. **The autocorrelation (serially correlated):** The autocorrelation bias occurs when the residuals of the regression are correlated through observations, and it might cause a wrong standard error of the regression (DeFuscoet al. 2015, p.450). The autocorrelation bias in this research is examined by applying Durbin's alternative test (Durbin, 1970). The significance of this test is at a 10% level, where the null hypothesis is H_0: the residuals of the regression are not serially correlated, while the alternative hypothesis is H_1: the residuals of the regression are serially correlated.

   Since the results of the above tests – in the next section- indicated that all residuals only had a heteroscedastic bias, and hence, this bias has been corrected by using the robust standard errors regression. Notice that the adjusted *R*-squared for the robust standard errors regression is derived from the Ordinary Least Squares (OLS) regression.

4. Results

Results: Religious Holiday Effect

As mentioned earlier, this research employs the CAPM as well as the FF3F with dummy variables to examine the religious holiday effect on Bursa Malaysia during the 1 December 2005–30 November 2017 examination period.

Holiday Effect after Applying the CAPM

Panel (a) in Table 1 show the findings of the three kinds of the ADF, the Breusch-Pagan (1979) and Durbin's alternative tests, while Panel (b) presents the regression results of the religious holiday effect after applying the CAPM.

Table 1: Results of the Religious Holiday Effect after Applying the CAPM

Panel (a)

- **Unit Root Test**

	ADF Test					
	Intercept only		**Intercept and Trend**		**No Intercept and No Trend**	
	Critical Value 5%	ADF Test stat.	Critical Value 5%	ADF Test stat.	Critical Value 5%	ADF Test stat.
HRAI	-2.887	-11.582	-3.444	-12.162	-1.950	-11.623
HRH	-2.887	-11.656	-3.444	-12.243	-1.950	-11.697
EMN	-2.887	-11.581	-3.444	-12.146	-1.950	-11.622
CNY	-2.887	-11.619	-3.444	-12.192	-1.950	-11.661
Christmas	-2.887	-11.550	-3.444	-12.144	-1.950	-11.591
New Year	-2.887	-11.525	-3.444	-12.100	-1.950	-11.566

- **Heteroskedasticity and Autocorrelation Tests**

	Breusch-Pagan (1979) Test		**Durbin's alternative Test**	
	Chi^2	Probability	Chi^2	Probability
HRAI	**27.640**	**0.000***	0.096	0.757
HRH	**23.230**	**0.000***	0.052	0.819
EMN	**20.950**	**0.000***	0.092	0.762
CNY	**24.830**	**0.000***	0.070	0.791
Christmas	**17.440**	**0.000***	0.113	0.736
New Year	**30.650**	**0.000***	0.129	0.720

* significant at 10%.

Panel (b) Religious Holiday Effect

$$(SCP_t - NSCP_t) = a + b_{Spread\ ,m}.MRP_t + d_{Spread\ ,D}(D_{s,t}) + \varepsilon_{Spread\ ,t}$$

	HRAI	**HRH**	**EMN**	**CNY**	**Christmas**	**New Year**
Prob> F	0.642	0.570	0.326	0.527	0.368	0.536
R^2	0.014	0.016	0.032	0.021	0.021	0.016
Adj-R^2	0.000	0.002	0.018	0.018	0.007	0.002
Intercept	-0.001	0.000	0.000	0.000	0.000	-0.001
t-Stat	-0.380	-0.210	0.100	-0.100	-0.080	-0.500
P. Value	0.702	0.832	0.918	0.917	0.934	0.617
b_MRP	-0.044	-0.044	-0.046	-0.044	-0.047	-0.044
t-Stat	-0.900	-0.890	-0.940	-0.900	-0.960	-0.890
P. Value	0.370	0.376	0.349	0.372	0.337	0.374
Holiday	0.000	-0.003	-0.008	-0.005	-0.005	0.002
t-Stat	-0.040	-0.530	-1.260	-0.730	-1.110	0.740
P. Value	0.971	0.599	0.211	0.468	0.270	0.461

The results of the ADF test in Panel (a) indicate that all ADF absolute values of all data are bigger compared to their corresponding critical values at a significant level of 5%. Hence, the alternative hypothesis cannot be rejected, which means that there is no unit root in the data, and the time series is stationary. In terms of the Breusch-Pagan (1979) test in the same panel, the results indicate that the p-values of all data are less than 10%. Therefore, the alternative hypothesis is accepted and the residuals are heteroskedastic. On the contrary, the p-values of all data are bigger than 10% in Durbin's alternative test, and hence, the null hypothesis is accepted, which means that the residuals are not serial serially correlated.It is evident from the results in Panel (b) that the return of the NSCP is higher than the return of the All SCP on all religious holidays, except for the HRAI and the New Year holidays, however, all these results are not statistically significant, since their p-values are bigger than 10%. Therefore, it can be concluded from the results above that after applying the CAPM, this research emphasises that the differences in the returns between the SCP and the NSCP are statistically not significant on certain religious holidays. Accordingly, the return of the SCP cannot outperform the return of the NSCP, or vice versa, significantly on the selected religious holidays on Bursa Malaysia over the examination periodfrom 1 December 2005 to 30 November 2017.

Holiday Effect after Applying the FF3F

The results of the religious holiday effect after applying the FF3F are presented in Table 2. Panel (a) displays the results of the ADF, Breusch-Pagan (1979), and Durbin's alternative tests, while Panel (b) shows the results of the religious holiday effect.

Table 2: Results of the Religious Holiday Effect after Applying the FF3F

Panel (a)

- **Unit Root Test**

	ADF Test					
	Intercept only		**Intercept and Trend**		**No Intercept and No Trend**	
	Critical Value 5%	ADF Test stat.	Critical Value 5%	ADF Test stat.	Critical Value 5%	ADF Test stat.
HRAI	-2.887	-12.583	-3.444	-12.900	-1.950	-12.627
HRH	-2.887	-12.763	-3.444	-13.078	-1.950	-12.808
EMN	-2.887	-12.513	-3.444	-12.825	-1.950	-12.557
CNY	-2.887	-12.646	-3.444	-12.963	-1.950	-12.691
Christmas	-2.887	-12.496	-3.444	-12.808	-1.950	-12.540
New Year	-2.887	-12.612	-3.444	-12.925	-1.950	-12.656

- **Heteroskedasticity and Autocorrelation Tests**

	Breusch-Pagan (1979) Test		**Durbin's alternative Test**	
	Chi^2	Probability	Chi^2	Probability
HRAI	**7.990**	**0.005***	0.504	0.478
HRH	**7.830**	**0.005***	0.774	0.379
EMN	**8.300**	**0.004***	0.401	0.527
CNY	**10.450**	**0.001***	0.580	0.446
Christmas	**10.590**	**0.001***	0.382	0.537
New Year	**10.950**	**0.001***	0.532	0.466

* significant at 10%.

Panel (b) **Religious Holiday Effect**

$$(SCP_t - NSCP_t) = a + b_{Spread\ ,m}.MRP_t + b_{Spread\ ,s}.SMB_t + b_{Spread\ ,v}.HML_t + d_{Spread\ ,D}(D_{s,t}) + \varepsilon_{Spread\ ,t}$$

	HRAI	HRH	EMN	CNY	Christmas	New Year
Prob> F	0.186	0.155	0.125	0.179	0.132	0.151
R^2	0.106	0.109	0.115	0.108	0.115	0.109
Adj. R2	0.080	0.084	0.090	0.082	0.090	0.084
Intercept	0.000	0.001	0.001	0.000	0.001	0.000
t-Stat	0.290	0.450	0.550	0.370	0.550	-0.130
P. Value	0.769	0.653	0.585	0.709	0.582	0.899
b_MRP	-0.014	-0.011	-0.015	-0.013	-0.018	-0.012
t-Stat	-0.330	-0.250	-0.370	-0.310	-0.420	-0.300
P. Value	0.741	0.805	0.716	0.757	0.675	0.767
b_SMB	0.258	0.256	0.245	0.250	0.264	0.263
t-Stat	2.390	2.380	2.270	2.300	2.430	2.420
P. Value	0.018	0.019	0.025	0.023	0.016	0.017
b_HML	-0.023	-0.031	-0.024	-0.025	-0.018	-0.020
t-Stat	-0.250	-0.330	-0.260	-0.270	-0.190	-0.220
P. Value	0.805	0.743	0.792	0.784	0.846	0.828
Holiday	-0.002	-0.004	-0.006	-0.003	-0.006	0.004
t-Stat	-0.430	-0.860	-1.060	-0.510	-1.500	1.560
P. Value	0.665	0.390	0.289	0.611	0.137	0.120

It is evident from the findings in Panel (a) that the ADF absolute values of all data are bigger than their corresponding critical values at a 5% level. Hence, the alternative hypothesis is accepted, which means that there is no unit root in the data, and the time series is stationary. Concerning the Breusch-Pagan (1979) test, the results indicate that all data have p-values inferior to 10% and, hence, the alternative hypothesis is accepted, and their residuals are heteroskedastic. While the results of Durbin's alternative test indicate that all data have p-values bigger than 10%. Thus, the alternative hypothesis is rejected in favour of the null hypothesis. Therefore, the residuals are not serially correlated.

The findings in Panel (b) show that there is no religious holiday effect between the SCP and the NSCP. The return of the SCP only outperforms the return of the NSCP on a New Year's holiday, but not significantly since its p-value is equal to 0.120, which is bigger than 10%. On the other hand, the return of the NSCP outperforms the return of the SCP on all other religious holidays, but also not significantly since all their p-values are bigger than 10%. Thus, after applying the FF3F, this research shows that the differences in the returns between the SCP and the NSCP are statistically not significant on the selected religious holidays. Therefore, the return of the SCP cannot outperform the return of the NSCP significantly or vice versa.

To conclude this section, after employing the CAPM and the FF3F, it is evident from the results that the return of SCP does not significantly outperform the return of NSCP on the selected religious holidays, namely, *Hari Raya Aid ilfitri*, *Hari Raya Haji*, *Eid Mawlid al-Nabi*, Chinese New Year, Christmas Day and New Year's Day on Bursa Malaysia. Thus, the results are in line with the findings of Tan and Tat (1998), Abdul Karim et al. (2012), Olson et al. (2015) and Kumar (2017), regarding the disappearance of anomalies in stock markets over time. This might give the impression of enhancing the market efficiency in Bursa Malaysia since investors could not make abnormal returns by analysing the historical movement of stock prices and returns. Besides, the results give another impression that the performance of SCP and NSCP is similar in Bursa Malaysia. The reason might be that the performance of the NSCP is affected, somehow, by the performance of SCP since the *Shariah*-compliant stocks represent a larger percentage of stocks listed in Bursa Malaysia.

Conclusion

The main goal of this research was to test whether the return of the SCP in relation to the NSCP is subject to any holiday effect in Bursa Malaysia over the 1 December 2005–30 November 2017 examination period. The researchers constructed a new semi-equally weighted portfolio (SCP–NSCP) that represents the monthly difference return between the *Shariah*-compliant stocks and the Non-*Shariah*-compliant stocks. The religious holidays that this research examined are (1) theHari Raya Aid ilfitri; (2) theHari Raya Haji; (3) the Eid Mawlid al-Nabi; (4) the Chinese New Year; (5) the Christmas; and (6) the Gregorian New Year.

The investigation is conducted by regressing the monthly returns of the (SCP–NSCP) on the monthly returns of the CAPM factor and FF3F factors with dummy variables. The most important finding of the holiday effect emphasises that the return of the SCP did not significantly outperform the return of the NSCP in all the selected holidays, and therefore, the return performance of the SCP and NSCP is comparable. Hence, the return of the *Shariah*-compliant stocks relative to the non-*Shariah*-compliant stocks was not subject to any religious holiday effect on Bursa Malaysia. As mentioned earlier, this result may provide the impression of improving market efficiency in Bursa Malaysia, since investors would be unable to achieve abnormal returns by analysing previous stock price and return movements.

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