The Indonesian Capital Market Review

Volume 3
Number 2 *July*

Article 3

7-30-2011

Moon Effect on Paciic Basin Stock Markets

Rayenda Khresna Brahmana
School of Management, Universiti Sains Malaysia, raye_brahm@yahoo.com

Chee Wooi Hooy
School of Management, Universiti Sains Malaysia

Zamri Ahmad
School of Management, Universiti Sains Malaysia

Recommended Citation

Brahmana, Rayenda Khresna; Hooy, Chee Wooi; and Ahmad, Zamri (2011) "Moon Effect on Paciic Basin Stock Markets," *The Indonesian Capital Market Review*: Vol. 3 : No. 2 , Article 3.
DOI: 10.21002/icmr.v3i2.3627
Available at: https://scholarhub.ui.ac.id/icmr/vol3/iss2/3

Moon Effect on Pacific Basin Stock Markets

Rayenda Khresna Brahman*, Chee-Wooi Hooy**, and Zamri Ahmad***

This is an empirical study on the influences of moon on seven stock markets, which are Indonesia, Malaysia, United Kingdom, United States, Philippines, Japan, and Thailand. The period is from January 1999 until December 2009 in daily basis. This study investigates the relationship between moon phase and market returns. We divided moon phases into new moon and full moon. While literature mention the relationship between moon phase and market returns, our research reject the null hypothesis in regression analysis. However, the descriptive catches the indication and confirmed previous research. It also proposes that the market is still rational and not moon-mood influenced. This result is not contending the EMH theorem. Further research is needed in term of investigating the relationship between psychology factors (heuristic bias, information ignorance, and other factors) and investor behavior. The effect of moon on certain anomalies has to examine specifically.

Keywords: *Psychological biases, moon phase, stock markets, behavioral finance*

Introduction

The main assumption in traditional economics is the rational behavior. It implies that the agents on economics activity are following their utility function without any biases. Each single decision must have its own purpose to fulfil or achieve their goals or satisfaction.

However, this assumption has been extensively argued by many scholars, especially the behavioral economics academicians. The practitioners also believe that the rational behavior cannot be used any longer in daily trading activities. Both behavioral scholars and practitioners address the psychological role is the most important driver on decision making. Hence, they offer behavioral approach to investigate further the role of human bias towards investing.

One of the sources of this bias is mood. There is hugely investigated research show the significant relationship between mood and decision. For example is the role of mood on consumer behavior. Isen et al. (1978) found that people tend to do more shopping when they have happy mood, and conversely, they tend less to do shopping when they have bad mood. Similar to it, Gardner (1985) showed moods played important role in retail consumer behavior.

*Rayenda Khresna Brahman, Finance Cluster, School of Management, Universiti Sains Malaysia, Minden, 11800, P. Penang, Malaysia, Email: raye_brahm@yahoo.com.
**Chee-Woi Hooy, Finance Cluster, School of Management, Universiti Sains Malaysia, Minden, 11800, P. Penang, Malaysia.
***Zamri Ahmad, Finance Cluster, School of Management, Universiti Sains Malaysia, Minden, 11800, P. Penang, Malaysia.

Interestingly, moon phase can be the attributes of mood. The gravity of moon affects human behavior as 80% of human body consists of water. In more academicals study, much research found the role of moon phase on people behavior. For instance is the paper of Huston and Passerello (1971). They found the relationship between depressive behavior and moon phase. Cuningham (1979) also found the relationship between moon and the generosity of human. In finance area, some paper also has worked in investigating the role of moon on developed market.

This paper examines whether the moon, which is proxy of moods, can influence the market returns process. This study is different in other study in three ways. *Firstly*, our study investigates by using pro rata returns of seven markets. *Secondly*, we check the cyclical of moon phases. *Lastly*, we introduce the control variable to eliminate the variance errors of previous study.

This study addresses the following question: to what extent the relationship between moon phases and market returns in seven markets? This study also aims to investigate the relationship between moon phases and market volatility. This paper is organized as follows: section 1 is the brief introduction; section 2 addresses the literature review, research methodology is on section 3; section 4 discusses the findings and results; section 5 concludes.

Literature Review

There have been widespread beliefs that moon cycles affect human behavior through its moods (Dichev and Janes, 2003). These beliefs have been started since Greece and Rome ancient time, throughout middle age, and to the present (Dichev and Janes, 2003). Religious ceremonies were often timed to match precise phases of lunar month, including Islamic, Hebrew, Jewish, and Chinese (Yuan et al., 2006). Based on this pattern, psychology scholars investigated the role of moon phases on human moods.

Early study was conducted by Huston and Passerello (1971), examining the implication of certain moon phase on human behavior. They conclude that full moon phase affects human behavior by altering the moods to be more depressive behavior, emotional disturbance, and normal changes. Dewey (1971) addresses that more births occur during waxing than the waning moon; death rate is increasing after full moon. Further, Cuningham (1979) addresses that full moon phase has an effect on the generosity of human. Other studies also show the effect of moon on arson activity and violence (Katzeff, 1981), accident at work (Nogueira, 1982), anxiety and depression (Wilkinson, 1997), and quality of life (Barr, 2000). In medical science, the mood of human increases the psychotic disorder, violence, and other deviant behavior during full moon phase.

Scholars believe that mood has influenced the economic behavior (Lo and Repin, 2001; Loewenstein, 2000). Isen et al. (1978) addresses that people tend to do shopping when they feel happy and conversely, they tend less to do shopping when they are not in a good mood. Gardner (1985) confirms this study by surmising that moods played important role in retail consumer behavior; and one of attribution of mood is moon phases.

Empirical results have also proved that moons cycles influence the decision making in finance. One of early finance studies was conducted by Dichev and Janes (2003). They conclude the moon cycle is in line with market returns. Thus, moon cycle did not affect volatility and trading volume. Yuan et al. (2006) examine the implication of moon phases on market returns Their findings surmise that the returns are lower on full moon than the days around new moon. The return difference is around 3%

to 5% between new moon and full moon. They also argue that moon cycle did not affect the volatility and trading volumes.

Herbst (2007) also conducted research on the link between moon phases and market returns. The relationship between moon and returns were vary and not consistent. Herbst explicates the daily returns volatility movement is inconsistent to moon phases. Herbst concludes that moon cycle is not reliable to predict returns or price volatility.

Sivakumar and Satyanarayan (2009) examined the relationship between moon cycle and Bombay Stock Exchange returns in the periods of 17 years. They surmise that moon cycle did link with the returns. Gao (2009) also examined the relationship between moon cycle and market return in two major Chinese stock market over 16 years. Gao concluded lunar phases did affect the stock returns. Gao showed the returns are relatively lower in new moon and relatively higher in full moon.

In a nutshell, our proposition is there is a significant relationship between moon phase and market returns in ASEAN-4. This moon phase, through its full moon lunacy, affects the behavior of investor in decision making. The full moon leads investor to be more irrational. We believe our empirical model can capture this relationship robustly.

Methodology

Variables definition

In environmental psychology, one of the external factors for mood disorders is moon phase. The preposition is that irrational behavior of investor could be driven by moon phase. Generally, the level of irrationality of investor can be written as a function of:

$$IB=f(Z_{moon\ phase}) \quad (1)$$

As function 1 included the moon phase effect, this research can set the moon empirical model. The phase of moon cycle is begun from the new moon until the next new moon. Figure 1 depicts the seven common well known phases between the new moon and the next new moon, namely Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Last Quarter, and Waning Crescent.

This research limits the moon phases into two phases which are: new moon and full moon. The separation between new moon and full moon is edged by the first quarter and last quarter. The function can be written as:

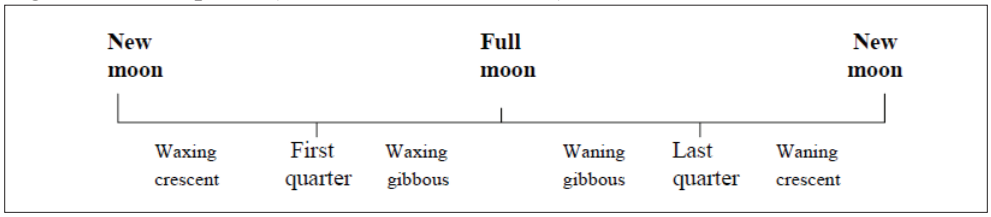
$$Z_{moon\ phase} = f(\omega_{new\ moon} \cap \omega_{full\ moon}) \quad (2)$$

Therefore, the measure for the moon phase is based on dummy variable. It is 1 for the full moon phase and 0 for the New moon phase. The other variables are market returns, tax year dummy, and Monday Effect Dummy. Note that Indonesia tax year is not December, but March.

Procedures

Before starting the investigation, we checked the cyclical of the moon phase. If

Figure 1. Moon phase (Dichev and Janes, 2003)



the phases are no cyclical, the moon phases could not be affecting the market returns. The result will also be bias. In regards of checking the cyclical phase, we employed Yuan et al. (2006), hereafter YZZ, model. The logic and assumption on YZZ model are that the lunar effect reaches its peak at the time of the full moon and declines to the trough at the time of the new moon following a cosine curve with a period of 29.53 days (the mean length of a lunar cycle). The YZZ model II is:

$$R_t=\alpha_t+\beta_t*Cos(2\pi d_t/29.53)+\varepsilon_t \quad (4)$$

where R_t is the daily return during a full moon or a new moon period in period *t*. *d* is the number of days since the last full moon day, and the β coefficient indicates the relationship between stock returns and lunar cycles.

This paper modified Dichev and Janes (2003) and Yuan et al. (2006) to investigate the association between the moon phases and market returns of each market. We introduce three control variables to eliminate the variance errors, which are: Tax Dummy, Monday Dummy, and One-Lagged Returns. However, we face dummy trap as there are three different dimensions of dummy variables. We follow Gujarati and Porter (2009) suggestion to avoid the trap by commencing the elimination of intercept. Hence, the model is:

$$R_t=\beta_t LD_t+\beta_2 Tax_2+\beta_3 Mon_t+\beta_4 R_{t-1}+\varepsilon_t \quad (5)$$

where R_t is the daily return during a full moon or a new moon period in period *t*. *LD* is a dummy variable indicating full moon or new moon period. The *Tax* is tax year return dummy of Indonesia. *Mon* is the Monday Effect dummy. Lastly, R_{t-1} is the one-lagged returns of each market. For last robustness check, we followed Kramer and Runde (1997) by using *t*-test to compare the new moon results and full moon results.

Sample

The samples in this research are market returns of seven stock markets, which are Indonesia, Malaysia, Philippines, Thailand, United Kingdom, United States, and, Japan. The period is from January 1999 until December 2009 in daily basis. The data of market returns is retrieved from Thomson Datastream and recalculated by using straight forward return calculation of lognormal approach: $R_t=Log(P_t/P_{t-1})$ where P_t and P_{t-1} are the closing prices of market on day *t* and *t-1*, respectively. Meanwhile, the moon phase calendar is retrieved from www.moonconnection.com. To be reliable sample, the moon has to be checked cyclical first (Dichev and Janes, 2003).

Result and Discussion

This section describes the statistical results of testing the hypothesis that certain phase of moon has significant effects on market returns. Our first result is the descriptive result giving the portraits of two moon phase effect on investor behavior. Panel A presents a comparison of moon phase effect across countries returns from 1999 to 2008. Note that for UK, US, and Japan market, we took FTSE-all, NYSE, and Nikkei 225 as the proxy, respectively.

Panel A depicts the returns of new moon phase and full moon phase and also its standard deviation. The purpose is to portray the descriptive of new moon returns and full moon returns. This investigation is robust because we cover comprehensive small stock exchange up to large cap stock exchange all the world. To be more robust, we also check the daily return in day-to-day basis of pooled data and equally weighted portfolio.

According to Panel A, the results are interesting. In term of new moon phase, Indonesia and Malaysia mean daily returns are considered high. Meanwhile,

Philippines mean daily returns are almost close to zero. UK and Japan mean daily returns are negative in new moon phase. In term of full moon, all the market has positive mean daily returns. The differences between Indonesia new moon returns and Indonesia full moon returns are huge. It is also happened for Malaysia, UK, and Thailand.

Panel A depicts the dispersion in term of standard deviation of the moon phase returns are considered high. The differences between new moon standard deviation and full moon standard deviation are also very small across countries. The correlation between new moon and full moon returns is also very small, indicating the new moon phase and full moon phase has different effects on the markets.

Further, in pooled data, the differences between new moon returns and full moon returns are also small. The correlation is also very low. The standard deviation of new moon returns and full moon returns is similar with country by country standard deviation, which is considered high.

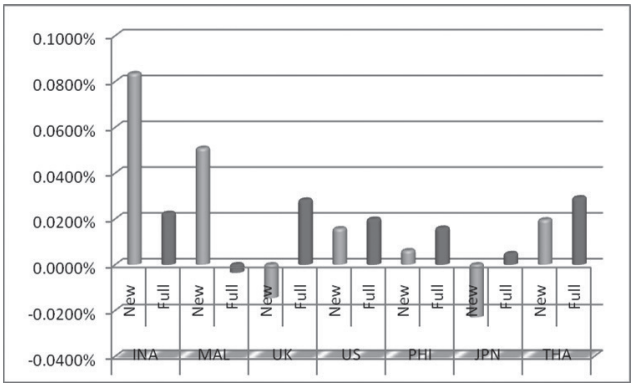
In equally weighted portfolio of seven markets, the new moon returns and full moon returns is also relatively high. The differences are very small, meaning there is no difference between new moon phase and full moon phase. The standard deviation is relatively higher compare to pooled data standard deviation.

Figure 2 depicts the annualized return of new moon and full moon. It illustrates the difference between new moon phase returns and full moon phase returns. It also discloses the relative magnitude of new moon and full moon on the returns across countries. Furthermore, our result is relatively different with previous research of Yuan et al. (2006) and Dichev and Janes (2003). The new moon returns performance on full moon returns performance is vary. New moon returns are higher than full moon only in Indonesia and Malaysia. This is different with the results of Yuan et al. (2006) and Dichev and Janes (2003), where nearly all the markets have higher new moon returns than full moon. In UK, US, Philippines, Japan, and Thailand, the new moon returns are lower than full moon returns.

Based on Figure 3, it also depicts that the new moon returns are disperse highly across the countries, meanwhile, the full moon returns are relatively normal distributed across the countries. The average of new moon returns across countries is 0.0196%, which is slightly higher than full moon returns of 0.0173%.

However, in daily basis of day-to-day, the volatility of new moon returns is actually

Figure 2. New moon and full moon returns across countries



lower than full moon returns. It indicates two main issues. *Firstly*, the full moon drives market volatility strongly compared to new moon. *Secondly*, the moon phase in each country has different magnitude level. These results are also contrary the previous results of Yuan et al. (2006), and Dichev and Janes (2003).

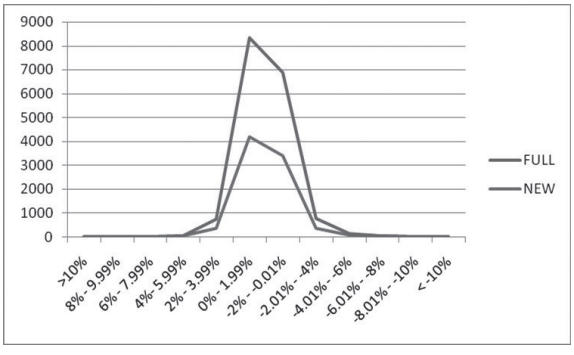
For more intuitive and robust summary, we plot the entire distribution of new moon returns and full moon returns into frequency distribution (Figure 3). It shows the distribution of the returns, new moon and full moon, in pooled data. It is based on 70 country-year of daily basis returns observation.

We clustered the observations in 2% intervals to provide a density plot of return frequency distribution. Again, the results are different with previous research of Dichev and Janes (2003). The new moon returns and full moon returns distribution are quietly different in shape of rates of increase and decrease, and the magnitude of kurtosis (Peak Shape). However, in term of dispersion, the shape of skewness is quite similar each other. Note that in term of skewness, the shift looks regular and clean throughout the entire right and left tails of Bell's distribution. Further, this shape difference confirms the moon phases have different impact on returns. It also depicts that moon has influenced the market in certain phase, meaning that certain phases of moon can affect the market volatility and returns. The latter, this study will investigate which moon phase that induced the market.

Figure 3 is a crisp graphical synopsis of our main findings. It is the base to explore further of the relationship between certain moon phases and market returns. The dispersion and uniquely different between new moon returns and full moon returns are the hypothesis making, which is: the certain moon phases have significantly induced market returns. However, this dispersion and differences are insidious and are not due to outlier or any erroneous effect. It is strengthened by the same characteristic in term on skewness and almost similar daily basis day-to-day volatility.

For robustness check, we conduct regression to test the relationship between moon and market returns. As depicted by Panel A and the two figures, it can be concluded the new moon phase and full moon phase has different contained information. It also can be seen, the returns of new moon and full moon is also different. The distribution of the differences between new moon and full moon is also various. These are the reason we conducted regression for further explanation.

Figure 3. Frequency distribution of the returns of new moon and full moon across countries



According to previous research of Yuan et al. (2006) and Dichev and Janes (2003), the moon phase has affected the market. They surmised it based on the descriptive result of annualized return of new moon and full moon. This study is different from previous research in term of the further examination. We aim to comprehensively understand how the market returns changes when any one unit of moon phase by conducting the regression.

Panel B portrays the result of the relationship between moon phase and market returns. The result is very interesting. It is different as expected as depicted by Panel A, and the Figures. None of the moon phases has significant influences on the market returns, meaning the moon phase has not affected the market returns. The hypothesis of moon phase has influenced significantly the market returns is rejected. Interestingly, even though the characteristic of new moon returns and full moon returns seems influencing the returns, the result of OLS regression concluded differently. US and Thailand that have small returns differences between new moon and full moon are also surprisingly resulting not significant relationship. The skewness shape of the distribution of new moon returns and full moon returns also does not guarantee the causal links. In other words, moon phase is not affecting the market returns generally in seven stock markets (Indonesia, Malaysia, UK, USA, Japan, Philippines, and Thailand). This result is also different with previous research that conducted by Yuan et al. (2006) and Dichev and Janes (2003).

Table 1. *t*-statistic result

Standard Errors & T-Statistic ()	
Indonesia	-4.83
	(-2.43)**
Malaysia	-5.97
	(-2.44)**
Philippines	-12.07
	(-3.14)***
Thailand	-8.6
	(-2.91)***
Japan	-3.24
	(-2.09)**
UK	-2.43
	(-1.43)
US	-2.45
	(-1.19)

*, **, *** denote the significant at the 10%, 5%, and 1% respectively

Conducting the *t*-test, our result shows shocking result. Table 1 address that there is significant difference between full moon phase and new moon phase in two tails. It indicates the return in full moon phase is not the same with the new moon phase. However, the significant difference is only aroused in emerging markets such as Indonesia, Malaysia, Philippines, and Thailand, but not in developed market such as UK and US. The developed market investors are relatively rational compare to emerging markets.

Conclusion

This study investigates the relationship between moon phase and market returns. We divided moon phases into new moon and full moon. The first quarter phase will be the edge of new moon. The last quarter phase will be edge of full moon. Further, this research aims to address the causal relationship between certain moon phase and market returns

While literature mention the relationship between moon phase and market returns, our research fails to reject the null hypothesis in regression analysis. However, the descriptive catch the indication and confirmed previous research of Yuan et al. (2006). It also proposes that the market is still rational and not weather-mood influenced. Our research does not find any evidence of the relationship between moon phase and market. Interestingly, after we confirmed the regression result with *t*-test, we found there is significant difference between full moon returns and new moon returns. Since the *t*-test confirms the descriptive analysis, we verify the result

by glancing deeper to the occurrence of full moon phase. We found that the frequency of full moon phases in Monday is relatively higher than other days. The occurrence of new moon phases in Tuesday and Friday is relatively higher than other days. Thus, we do not investigate it as it is not our research objective and out in our scope. It will be an interesting future research to examine this phenomenon where it is almost similar to Weekend Effect.

Since the results shows rejection of the hypotheses, it shows the moon phase does not play important role on the investor decision in investing. Of course, the psychology argues that moon phase is one of mood attribution where it can influence the human behavior. In finance, our result confirms that even though moon phase can influence the mood, it cannot influence the rational behavior of investor.

Except investigating the role of moon phase on weekend effect, further research is needed in term of investigating the relationship between psychology factors (need for cognition, heuristic bias, information ignorance, and other factors) and investor behavior. The effect of moon on certain anomalies has to examine specifically.

References

Barr, W. (2000), Lunar Revisited: The Influence of the Moon on Mental Health and Quality of Life, *Journal Psychosocial Nurse Mental Health Science*, 38(5), 28-35.

Cunningham, M.R. (1979), Weather, Mood and Helping Behavior: Quasi-experiment with the Sunshine Samaritan, *Journal of Personality and Social Psychology*, 37, 1947–1956.

Dewey, E.R. (1971), Cycles: The Mysterious Forces that Trigger Events, *Foundation for the Study of Cycles*, New York.

Dichev, I.D. and Janes, T.D. (2003), Lunar Cycle Effects in Stock Returns, *Journal of Private Equity*, 6, 8–29.

Gardner, M.P. (1985), Mood States and Consumer Behavior, *Journal of Consumer Research*, 12, 281-294.

Gao, Q. (2009), Lunar Phases Effect in Chinese Stock Returns, *2009 International Conference on Business Intelligence and Financial Engineering*, Beijing, China, July 24-July 26.

Herbst, A. (2007), Lunacy in the Stock Market—What is the Evidence?, *Journal of Bioeconomics*, 9, 1–18.

Huston, R.L. and Passerello, C.E. (1971), On the Dynamics of a Human Body Model, *Journal of Biomechanics*, 4(5), 369-378.

Isen, A., Shalker, T.E., Clark, M., and Karp, L. (1978), Affect, Accessibility of Material in Memory and Behavior: A Cognitive Loop?, *Journal of Personality and Social Psychology*, 36, 1-12.

Katzeff, K. (1981), *Moon Madness*, Secaucus, N.J: Citadel Press.

Lo, A.W. and Repin, D.V. (2001), The Psychophysiology of Real Time Financial Risk Procession, *Sloan Working Paper 4223.01*, MIT Sloan School of Management.

Loewenstein, G.F. (2000), Emotion in Economic Theory and Economic Behavior, *American Economic Review*, 65, 426–432.

Nogueira, D.P. (1982), Effect of Lunar Cycle on Human Behavior, *Journal Royal Social Medicine*, 75(9), 753-754.

Sivakumar, N. and Satyanarayan, S. (2009), Do Krishna Paksha (New Moon Phase) and Shukla Paksha (Full Moon Phase) affect the Indian Stock Market? – A Study of Lunar cycles in the Bombay Stock Exchange, *International Journal of Indian Culture and Business Management*, 2(3), 281-293.

Wilkinson, G. (1997), Lunar Cycle and Consultation for Anxiety and Depression in General Practice, *International Journal of Social Psychiatry*, 43(1), 29-34.

Yuan, K., Zheng, L., and Zhu, Q. (2006), Are Investor Moonstruck? Lunarphase and Stock Returns, *Journal of Empirical Finance*, 13, 1-23.

Appendices

Panel A. Descriptive new moon returns and full moon returns across countries

INDONESIA	New Moon	Full Moon	Differences	F Value	Correlation
Mean Daily Return	0.000835	0.000227	0.000608	0.000748	0.043
Standard Deviation	0.014613	0.01643	-0.001817		
MALAYSIA	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	0.000509	0.000013	0.000496	0.861553	0.026
Standard Deviation	0.010512	0.010564	-0.000052		
PHILIPPINES	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	0.000062	0.000136	-0.000074	0.901019	0.017
Standard Deviation	0.014437	0.01451	-7.35E-05		
THAILAND	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	0.000196	0.000337	-0.000141	0.541326	-0.002
Standard Deviation	0.015915	0.01572	0.000195		
UK (FTSE All)	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	-0.00015	0.000296	-0.000446	0.895074	-0.030
Standard Deviation	0.01187	0.012085	-0.000215		
US (NYSE)	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	0.000158	0.000172	-0.000014	0.192053	-0.031
Standard Deviation	0.012366	0.012491	-0.000125		
JAPAN (NIKKEI 225)	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	-0.00023	0.000057	-0.000287	0.546618	0.025
Standard Deviation	0.015259	0.015822	-0.000563		
POOLED DATA	New Moon	Full Moon	Differences	Fvalue	Correlation
Mean Daily Return	0.000196	0.000173	0.000023	0.199732	0.010
Standard Deviation	0.013692	0.014095	-0.000403		
EQUALLY WEIGHTED	New Moon	Full Moon	Differences		
Mean Daily Return	0.000198	0.000173	0.000025		
Standard Deviation	0.013567	0.013946	-0.000379		

Panel B. The regression result of pooled moon phases and market returns across countries

Indonesia
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	-0.000609	-0.96455	0.3349
Tax	0.000109	1.114135	0.2342
Monday	0.000169	1.134135	0.2569
Rmin1	0.05352	5.06592	0

Malaysia
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	-0.000522	-1.22049	0.2224
Tax	7.79E-05	0.16704	0.8674
Monday	0.000191	0.588408	0.5563
Rmin1	0.09149	4.66168	0

Philippines
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	7.49E-05	0.127553	0.8985
Tax	0.000204	0.28926	0.7724
Monday	0.000338	1.034332	0.3011
Rmin1	0.04957	4.27861	0

Thailand
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	0.000141	0.220005	0.8259
Tax	0.000227	0.292281	0.7701
Monday	0.000567	1.576578	0.115
Rmin1	0.03176	3.43786	0.0006

United Kingdom
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	0.000443	0.912168	0.3618
Tax	-6.28E-05	-0.08022	0.9361
Monday	-0.000261	-0.4781	0.6326
Rmin1	0.01087	1.18142	0.2376

United States
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	1.48E-05	0.02937	0.9766
Tax	-0.000421	-0.56621	0.5713
Monday	0.000283	1.179573	0.2383
Rmin1	0.00894	0.87251	0.383

Japan
Included observations: 2870 after adjustments

Variable	Coefficient	t-Statistic	Prob.
LD	0.000288	0.456031	0.6484
Tax	-8.43E-05	-0.11929	0.9051
Monday	0.000903	0.889596	0.3738
Rmin1	-0.01922	-1.86606	0.0622