



The January Effect and Lunar New Year Influences in Frontier Markets: Evidence from Vietnam Stock Market

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Received: 02 November 2020

Accepted: 7 February 2021

DOI: <https://doi.org/10.32479/ijefi.10928>

ABSTRACT

This analysis investigates the influence of the timing of the Lunar New Year on the January effect for the Vietnam stock market. The data selected for this study is a weekly series of the market index (VN-Index) over the period from January 7, 2009 through December 26, 2018. To test for the presence of the January effect and the impact of timing of the Lunar New Year on the January anomaly, OLS and GARCH(1,1) regression models are employed. The empirical findings obtained from these models confirm the existence of the January effect during this period in the Vietnam stock market. However, the analysis reveals that the January effect is only in existence when the Lunar New Year is in February, but it is disappearing when the Lunar New Year falls in January. These findings suggest that Lunar New Year has a significant impact on the January anomaly in the Vietnam stock market providing evidence against tax loss selling while supporting other holiday and window dressing hypotheses for this widely documented seasonal phenomenon.

Keywords: The January effect, Lunar New Year influences, Vietnam stock market

JEL Classifications: G10, G40

1. INTRODUCTION

Seasonal anomalies (day-of-the-week effect, January effect, turn-of-the-month effect) in stock returns have been extensively studied and documented in the financial literature for the last few decades. Among such anomalies, the January effect has been one of the most pronounced and prodigious patterns documented across many global markets. The January effect indicates that stock returns are abnormally higher in January than for other months of the year. Several explanations for this anomaly have been proposed in the literature including the tax-loss selling hypothesis and the gamesmanship or window dressing hypothesis.

There are two distinct differences between the two hypotheses. The tax-loss selling hypothesis explanation is driven by the behaviour of individual investors and that subset of taxable institutional investors who are motivated primarily by financial opportunity

to generate losses to offset gains earlier in the year. Specifically, the tax-loss selling hypothesis states that individual investors tend to sell stocks that decline in price toward the end of the year to realize capital losses and avoid income tax on capital gains. Returns of those stocks that have generated losses either through excessive volatility or poor performance are sold towards the end of December to realize the accrued losses. This abnormal sales volume depresses the prices of these stock at the end of December especially for shares of small firms with less liquidity. However, these stocks quickly rebound at the start of the new year in January as the excessive selling pressure ceases, and they return to their equilibrium levels.

On the other hand, the gamesmanship hypothesis focuses on the behaviour of institutional investors. This hypothesis posits that the abnormal returns of stocks in January result from portfolio rebalancing by institutional investors who at the end of the year

shift out of their losers and lesser known more volatile small firm stocks to more well known, prestigious and high performing stocks to “Window Dress” their annual reports. This shift in buying and selling pressure by institutional investors increases the performance of larger more well-known firms towards the end of the year while depressing prices of smaller more volatile stocks and underperformers. Then at the start of the new year to influence performance-based remuneration institutional investors start buying back these higher-risk small cap and underperforming stocks to outperform the benchmarks. They are willing to take greater risks earlier in the year because they have sufficient time to correct mistakes before year-end without jeopardizing their income.

The existence of the January effect has been widely observed in many markets across the globe and including in the U.S. stock-market since the early 1900’s and has persisted over time (Wachtel, 1942; Rozeff and Kinney, 1976; Mehdian and Perry, 2002). In addition to the US markets, the January effect occurs in other developed markets, such as Japan (Reyes, 2001; Das and Rao, 2011), Canada (Tinic et al., 1987; Athanassakos, 2002), and the U.K and France (Das and Rao, 2011). Moreover, like the developed markets, the January effect is also discovered in emerging markets (Aggarwal and Rivoli, 1989; Wong et al., 1990; Fountas and Segredakis, 2002; Balinta and Gica, 2002; Asteriou and Kavetsosb, 2006).

Like other emerging stock markets, recent research has confirmed the presence of the January effect for Vietnam (Luu et al., 2016; Thach et al., 2019; Zaremba, 2015). However, no study specifically examines the influence of the timing of the Lunar New Year on the January anomaly for the Vietnam stock market. The Lunar New Year Celebration, where beginning of the year is based on the lunar calendar, occurs annually across Asia and is one of the seminal annual holiday events for those Asian countries that historically followed the traditional Chinese lunisolar calendar and represents the largest seasonal migration of people on the planet as people return to the traditional home to celebrate with their families. The Lunar New Year celebration occurrence on the Gregorian Calendar varies across late January and February based on the lunar cycle.

The cultural significance to the Vietnamese people and the country of Vietnam of the Lunar New Year may affect trading patterns during this period and significantly impact the January anomaly in the Vietnam stock market. The Lunar New Year, also called *Tet* in Vietnamese, is the most important holiday and festival in Vietnamese culture. Vietnamese people believe that the Lunar New Year holiday is an occasion to enjoy life after a full year of hard work. Therefore, they spend considerable money on food, clothes, decorations for their houses, lucky money for relatives and even more substantial purchases such as a motorcycle, a major vacation or even a new car. As a result, many individual investors in the stock market may sell stocks to get cash to fulfill this demand. Based on this possible liquidity selling by Vietnamese investors preceding the Lunar New Year, we hypothesize that the January effect may diminish the closer the Lunar New Year falls relative to the Gregorian new year on January 01.

This study serves to enrich the literature by testing for the existence of the January effect and the impact of Lunar New Year on the January anomaly in the Vietnam stock market. This section includes the introduction to the theoretical foundation for this analysis. Section 2 includes a review of literature related to the key hypotheses in this paper. Section 3 presents describe the data collection and analysis process while Section 4 reports the main findings of the empirical analysis. Finally, Section 5 provides a review of the key conclusions of the study within the context of previous literature.

2. EXAMINATION OF LITERATURE

The efficient market hypothesis and the January effect as a stock market anomaly will frame this analysis. The January anomaly provides a direct challenge to the efficient market hypothesis. (Patel, 2016; Rossi and Gunardi, 2018). Both concepts provided foundations for and remain important to our understanding of stock market behaviour (Haugen and Jorion, 1996; Fama, 1965; Fama, 1991; Kendall, 1953; Patel, 2016; Rossi and Gunardi, 2018).

2.1. The Efficient Market Hypothesis

The Efficient Market Hypothesis argues that markets are efficient quickly incorporating all information causing them to essentially follow a random walk. There is a constant ongoing process by market by large numbers of informed market participants where they incorporate and adapt to new information. This process should eliminate any historical price inefficiencies as the market incorporates and adapts to this information. (Patel, 2016; Rossi and Gunardi, 2018). The Efficient Market Hypothesis was first introduced in the 1950s (Kendall, 1953) and further developed in 1965 including the introduction of the term “efficient market” (Fama, 1965). In an “efficient market”, all stocks should trade at fair value, adjusting rapidly without any observable bias to new information flowing to the market (Rossi and Gunardi, 2018).

Based on this concept, monthly systematic patterns in stock returns, such as the January effect, should not exist (Patel, 2016). For this reason, as will be described further in the section to follow, the January effect is a stock market anomaly because it is inconsistent with the premise of efficient market theory (Patel, 2016). Although the efficient market theory has been reviewed and questioned by researchers in recent years, it remains a foundational theory in finance and in understanding stock market behaviour (Rossi and Gunardi, 2018).

2.2. January Effect

The January effect is an anomaly in the stock market during which the mean raw returns during the month of January are significantly higher than other months of the year (Patel, 2016). The January effect is often cited by many financial analysts, professional money managers and academic researchers as one of the best-known examples of anomalous behaviour in security markets on a global level (Haugen and Jorion, 1996). The January effect was first introduced in the 1940s by Wachtel and was later reintroduced by Rozeff and Kinney in the context of efficient markets and unbiased participant behaviour (Rozeff and Kinney, 1976; Watchel, 1942).

Other researchers argue to the contrary that the January effect as an “anomaly” in the stock market is consistent with the rational behaviour of the economic market (Easterday and Sen, 2016). Specifically, using a fundamental accounting valuation approach, Easterday and Sen (2016) concluded that tax-loss selling serves as an explanation for the January effect because January effect firms are potential tax-loss sellers, which causes the anomaly in the month of January rather than in other months (Easterday and Sen, 2016). Considering potential changes in the January effect in recent years, Patel (2016) examined the January effect in international stock returns during the period of January 1997 to December 2014. Based on the findings of the study, Patel (2016) concluded that there has been a reduction in the January effect in the international market in recent years indicating market participants may be adapting behaviour to incorporate this anomaly.

More recently, researchers have suggested that calendar anomalies such as the January effect may be country-specific and differ in significance due to their instabilities (Rossi and Gunardi, 2018). For this reason, additional research is needed on the January effect as a calendar anomaly, the impact of these anomalies on both international and country-specific stock markets, and the relationship between calendar anomalies and the concept of the efficient market (Patel, 2016; Rossi and Gunardi, 2018). With these two foundational theories as a framework, the review of recent and relevant literature will be presented in the following section.

2.3. Relevant Literature

The evidence identified in this review of the literature will be presented beginning with broad themes and will progress into more specific topics, organized into categories. The categories that will be presented are: (a) an overview of the Vietnam stock market; (b) the January effect as a stock market anomaly in Vietnam; (c) Lunar New Year and the January effect. Key findings from this review of the literature as well as identified gaps will be described in the summary and conclusions subsection to conclude Section 1.

2.3.1. An overview of the Vietnam stock market

With the theoretical foundation established, an overview of the Vietnam stock market will first be presented in this section. Because the January effect and the Efficient Market Theory include a focus on the behaviour of markets, this section will highlight research on behaviours and trends in the Vietnamese stock market. The Vietnam stock exchange was founded in 2000 and is comprised of Ho Chi Minh City (HCMC) stock exchange (HOSE) and the Ha Noi stock market (HNX) (Trang and Tho, 2017). In recent literature, the Vietnam Stock Markets have been described is often called an emerging market (Bui et al., 2018; Trang and Tho, 2017). However, more recently, Bui et al. (2018) noted that the HOSE is identified as a frontier market with herding behaviour. FTSE Russell and MSCI identify frontier markets as less developed than emerging markets.

Herd behaviour is a concept that has developed over the past two decades and is defined as a phenomenon in the market in which the behaviour of investors mimics the behaviour of other investors (Bui et al., 2018). Herd behaviour in the market has been considered by researchers as irrational because investments using

such behaviour may result in abnormal losses and returns in the financial market (Bui et al., 2018). Based on this concept, in their study, Bui et al. (2018) examined herd behaviour in the Vietnam stock market using data from January 2007 to October 2014. The two main Vietnamese stock exchanges analysed in the study were *HOSE* and *HNX*. From the analysis of these two markets during the identified period, the researchers determined that herding behaviour exists in all sectors of the Vietnamese stock market. Specifically, Bui et al. (2018) found that the five sectors that had herding behaviour in all time periods analysed were real estate, information technology, financial services, essential resources, and construction-materials. The findings of the Bui et al. (2018) study are significant because they suggest that investors engage in herding behaviour in both up and down markets in Vietnam.

In a separate study by Trang and Tho (2018) also on behaviour in stock investing, the researchers developed measurement scales of risk perception to analyse the effects of perceived risk on investment performance and the intentions of individual investors. The behaviour of individual investors is important behaviour they impact the performance of the stock market (Trang and Tho, 2018). Considering the issue of perceived risk and investment performance and their impact on the Vietnam stock market as an emerging market, Trang and Tho (2018) determined that perceived risk was positively associated with investment performance and intentions. In other words, the higher investors perceived the risk of certain stock types, the greater their satisfaction with their investment decisions (Trang and Tho, 2018). The researchers noted that understanding this investor behaviour is important in determining ways to attract more investors to the Vietnam stock market (Trang and Tho, 2018). With this overview of the Vietnam stock market and an understanding of behaviours in this market, the following section will include literature on the January effect and its impact on the Vietnam stock market.

2.3.2. The January effect as a stock market anomaly in Vietnam

There is limited literature related specifically to the January effect as a stock market anomaly in Vietnam. However, in a study by Zaremba (2015) in which 78 markets, including the Vietnamese market, were examined, the researcher found that in the period of 1995-2015, markets performed particularly well in the month of January and poorly in the month of December. The researcher also found that momentum strategies in these markets had higher returns in December and lower returns in January. Zaremba (2015) concluded that these patterns were consistent with the effects of January seasonality, described in this paper as the January effect. As described in the section on the January effect, Zaremba (2015) described January seasonality as attributable to tax-loss selling and window dressing effects that result in higher market performance in January.

In addition to the recent literature presented by Zaremba (2015), there is also evidence of seasonality effects, that is changes based on seasons and holidays, on the Vietnamese stock exchange. The lack of recent literature on the January effect as specific to the Vietnamese market provides additional evidence for a need for research on this topic. For example, Thach et al. (2019) examined the phenomenon of seasonal affect disorder, that is changes in

the market based on seasons, in Vietnam's stock market during the period of February 2002 to December 2017. The researchers used three distributed patterns, normal distribution (Gaussian distribution), Student-t distribution, and generalized error distribution (GED), to analyse the effect of season affect disorder in the Ho Chi Minh Stock Exchange (HOSE). From this analysis, Thach et al. (2019) determined that seasonal affective disorder does influence the Vietnam stock market. In particular, the effect impacted both stock returns and the volatility of return. Thach et al. (2019) also determined that the effect was more significant in Ho Chi Minh City than in Hanoi.

In a separate and earlier study, Luu et al. (2016) examined the seasonality effect in the Vietnamese Stock Market, specifically the day of the week effect, January effect, and turn of the month effect. The researchers examined seasonality using the deductive approach and quantitative research methods. These methods were used to test the seasonality effect in the Ho Chi Minh Stock Exchange in the period from 2006 to 2014. The results of this analysis, like the more findings of Thach et al. (2019), found that seasonal anomalies exist in the Vietnamese market. However, Luu et al. (2016) noted that as a developing market, the Vietnamese Stock Market is not yet fully efficient. For this reason, investors can make use of seasonal anomalies to earn an abnormal return based on these patterns in the market (Luu et al., 2016). Based on the findings presented by the researchers in this section, there is evidence that the Vietnam stock market is impacted by the January effect, with better performance in the month of January (Luu et al., 2016; Thach et al. 2019; Zaremba, 2015). With Lunar New Year falling in the month of January in some years, while not specifically reflected in the literature, it is possible that Lunar New Year may have some impact related to the January effect in the Vietnam stock market. In the following section, the impacts of Lunar New Year as related to the January effect in other global markets will be explored.

2.3.3. Lunar New Year and the January effect

As determined from this review of the literature, there is a lack of recent evidence on the specific impacts of the Lunar New Year on the Vietnam stock market, the topic of this paper. However, there is evidence of a potential link between the Lunar New Year and the January effect in other countries such as China. For example, in a review of the Chinese stock market, an active market that also celebrates the Lunar New Year, Feng and Stewart (2015) investigated inefficiencies and anomalies related to holidays and calendar effects. The researchers noted that despite being a major world player in the world's equity markets, the Chinese stock market is still unbalanced and has small and unevenly developed institutional investors (Feng and Stewart, 2015). Based on a review of the literature, Feng and Stewart (2015) determined that there is a February turn-of-the-year effect in the Chinese stock market which is associated with the Chinese Lunar New Year. Furthermore, the Chinese Lunar New Year has stronger and more persistent effects on the Chinese stock market than any other public holiday (Feng and Stewart, 2015; McGuinness and Harris, 2011; Mitchell and Ong, 2006, Wu, 2013).

In a study on the stock market in Taiwan, Yang and Lee (2016) investigated the impact of both the Solar New Year and Lunar

New Year on stock returns. The data source used for the research was the Taiwan Economics Journal for the period of 1971 to 2014 (Yang and Lee, 2016). The researchers found that the effects of the Lunar New Year have a greater impact on stock returns in Taiwan than does Solar New Year (Yang and Lee, 2016). However, Yang and Lee (2016) determined that this effect has been diminishing in Taiwan over time. Furthermore, Yang and Lee (2016) found that the monthly effect, particularly the January effect, does exist in Taiwan, as in many other markets. As in Vietnam, Lunar New Year in Taiwan involves many festivities that are based on the lunar calendar (Yang and Lee, 2016). The findings of Yang and Lee (2016), as in Feng and Stewart (2015) are relevant to the present study because they demonstrate the impact of Lunar New Year on stock market performance in countries with large Lunar New Year festivities. Drawing from the evidence of impacts on the Chinese stock market from Feng and Stewart (2015), the Lunar New Year, particularly when it occurs in February rather than January, may have potential impacts on the Vietnam stock market.

Similarly, while some evidence is available, there are few studies on the specific relationship between and effects of Lunar New Year on the January effect. However, there is evidence that the Vietnam stock market is impacted by seasonality effect, such as the January effect (Luu et al., 2016; Thach et al., 2019; Zaremba, 2015). Researchers have also determined that Vietnam is an emerging, or developing market, and is impacted by herding behaviour (Bui et al., 2018; Luu et al., 2016; Trang and Tho, 2017). Considering that the Vietnam stock market is impacted by investor behaviours such as herding and given that Lunar New Year may fall in the January month in Vietnam, Lunar New Year may impact the performance of the market. For this reason, there is a need for additional research to investigate this topic. The aim of this study is to address these gaps and contribute to the existing literature by investigating the January effect and influences of Lunar New Year on the January effect anomaly in the Vietnam stock market.

3. DATA AND METHODOLOGY

3.1. Data

The data used to investigate the January effect and influences of Lunar New Year on the January anomaly in the Vietnam stock market is primarily the weekly market index series (VN-Index). The VN-Index is a composite index calculated from the prices of all common stocks traded on the Ho Chi Minh stock exchange (HOSE). Specifically, the Index is a market capitalization weighted price index that compares the current market value of all listed common shares to the value on the base date of the first trading session. The VN- Index was primarily set at 100 points.

Table 1 provides the dates of the Lunar New Year from 2009 through 2018. As the table indicates, the Lunar New Year occurs in January for four of the ten years in the sample set. It occurred as early as January 23rd and as late as February 19th indicating the substantial variation in the occurrence of the Lunar New Year relative to the January 1st turn of the year.

Table 2 provides key summary statistics for the dataset. The weekly Index series is collected from the Wednesday's closing price. If

the Wednesday’s price is not available, then Thursday’s price (or Tuesday’s if Thursday’s is not available) is used. If both Tuesday’s and Thursday’s prices are not available, the price for that week is reported as missing. The choice of Wednesday aims to avoid the effects of weekend trading and to minimise the number of holidays (Huber, 1997). The data are obtained over the period from January 7, 2009 to December 26, 2018 from the website of HOSE (www.hsx.vn). Then, a natural logarithmic transformation is performed for the primary data. To generate a time series of continuously compounded returns, weekly returns are computed as follows:

$$r_t = \text{Log}(I_t) - \text{Log}(I_{t-1})$$

where I_t and I_{t-1} are the market index at week t and $t-1$.

As the results reported in Table 2 indicate, monthly returns the month of January had the highest mean return at 7.94%. However, May showed the highest return from the entire sample period. Interestingly, February, the month with most Lunar New Year dates had the lowest observed return at 8.92%. However, its overall return was slightly positive. The month of November provided the lowest overall mean return at -0.83%.

3.2. Methodology

To test for the presence of the January effect on stock returns in the Vietnam stock market, the OLS (ordinary least square) regression is employed in this study. Specifically, the model takes the following form:

$$R_t = \alpha + \beta D_t + \varepsilon_t \tag{1}$$

Table 1: Dates of the Lunar New Year for the period from 2009 through 2018

Year	Date
2009	January 26
2010	February 14
2011	February 3
2012	January 23
2013	February 10
2014	January 31
2015	February 19
2016	February 8
2017	January 28
2018	February 16

Table 2: Monthly returns and summary statistics from 2009 through 2018

Month	Observations	Minimum Monthly Return.	Mean Monthly Return	Maximum Monthly Return	Standard Deviation
January	10	-2.85%	2.05%	7.94%	3.41%
February	10	-8.92%	0.10%	6.75%	4.10%
March	10	-2.39%	0.93%	5.55%	2.19%
April	10	-5.00%	0.63%	6.39%	3.13%
May	10	-8.45%	-0.20%	12.12%	5.61%
June	10	-3.65%	1.09%	5.11%	2.40%
July	10	-2.59%	0.12%	2.48%	1.70%
August	10	-6.38%	-0.14%	6.00%	3.91%
September	10	-1.78%	1.21%	4.32%	1.59%
October	10	-4.28%	-0.28%	2.52%	2.01%
November	10	-7.61%	-0.83%	5.93%	3.42%
December	10	-3.57%	-0.18%	4.21%	2.43%
All groups	120	-8.92%	0.38%	12.12%	3.14%

where R_t is the return of the market index at week t ; D_t is the dummy variable for January (D_t is equal 1 if observation t falls in January and 0 otherwise) and ε_t is an error term and assumed to be independently and identically distributed (iid).

It is likely to be that the assumption of homoscedasticity (the variance of the errors is constant over time) is usually violated in the context of financial time series. Moreover, according to Brooks (2002), if the assumption is not satisfied and the OLS model is still employed, the standard errors could be wrong and thus any inferences drawn from the model could be misleading. To deal with this issue, Engle (1982) proposed the class of ARCH models (ARCH stands for “autoregressive conditional heteroscedasticity”) in which the variance of errors allows to evolve over time as a function of past errors. Then, Bollerslev (1986) generalized the ARCH models as GARCH that allows the conditional variance to be dependent upon earlier own lags. In this study, the simplest form of GARCH [GARCH (1,1)] is employed. To examine the January effect on the market returns, the GARCH (1,1) takes the following form:

$$R_t = \alpha + \beta D_t + \varepsilon_t \quad \varepsilon_t \sim N(0, h_t)$$

$$h_t = \omega + \beta \varepsilon_{t-1}^2 + \gamma \varepsilon_{t-1}^2 \tag{2}$$

If any significant coefficients β are found in the simple OLS and GARCH (1,1) models, the hypothesis of the January effect can be accepted.

During the studied period, the Lunar New Year falls either in January or February. Therefore, to test for the influences of Lunar New Year on the January effect, the data is divided into two subsamples. The first subgroup includes data that has Lunar New Year is in January while the other subgroup is the rest. It is expected that the January effect exists only for those years when the Lunar New Year is in February.

4. EMPIRICAL RESULTS

The empirical findings derived from the OLS model with the entire sample presented in Table 3 show that the January effect is present in the Vietnam stock market. Specifically, the average market return in January is significantly higher than in other

months of the year at the 5% level. It is important to note here that the conclusion above is based on the OLS method, which ignores the time-varying volatility (ARCH effect) that is suspected to be present in the observed series. If the ARCH effect exists in the market returns, the GARCH (1,1) model should be applied. To check for the presence of ARCH effect, the Lagrange Multiplier (LM) test, proposed by Engel (1982), is conducted, using 1 lag¹. The results of the ARCH-LM test indicate significant ARCH effect is present in the OLS Model since the test statistic of the model is higher than the LM-critical value at the one percent level significant. Clearly, due to ARCH effects in the series, GARCH (1,1), which considers time-varying variance, is more appropriate than the OLS method in testing for the January effect in the market

¹ The author also performs several lag orders, and the basic results remain the same.

Table 3: Empirical findings for the entire sample

	OLS	GARCH(1,1)
Conditional mean equation		
Constant	0.000546 (0.85)	0.000702 (1.26)
D	0.004617 (1.97)**	0.005415 (3.33)*
Observations	505	505
ARCH-LM tests (1 lag)	48.12*	
Conditional variance equation		
ω		0.000002 (5.79)*
ε^2_{t-1}		0.110936 (8.28)*
h_{t-1}		0.885131 (20.98)*

***Significant at the 1% and 5% levels respectively. t-values in parentheses for OLS model; z-values in parentheses for GARCH(1,1) model.

Table 4: Empirical findings for subsample when the Lunar New Year is in February

	OLS	GARCH(1,1)
Conditional mean equation		
Constant	-0.000539 (-0.67)	-0.000035 (-0.04)
D	0.006374 (2.32)**	0.007282 (3.30)*
Observations	305	305
ARCH-LM tests (1 lag)	36.35*	
Conditional variance equation		
ω		0.000065 (2.84)*
ε^2_{t-1}		0.289955 (4.79)*
h_{t-1}		0.356167 (2.57)**

**Significant at the 1% and 5% levels, respectively. t-values in parentheses for OLS model; z-values in parentheses for GARCH(1,1) model.

Table 5: Empirical findings for subsample when the Lunar New Year is in January

	OLS	GARCH(1,1)
Conditional mean equation		
Constant	0.002156 (2.04)**	0.001407 (1.97)
D	0.001550 (0.36)	0.006128 (1.50)
Observations	200	200
ARCH-LM tests (1 lag)	9.68*	
Conditional variance equation		
ω		0.000003 (1.11)
ε^2_{t-1}		0.213618 (2.99)*
h_{t-1}		0.787237 (15.36)*

***Significant at the 1% and 5% levels, respectively. t-values in parentheses for OLS model; z-values in parentheses for GARCH(1,1) model.

returns. The findings of the GARCH (1,1) model consistently confirm that the January effect exists in the market returns at the one percent level of statistical significance. Based on these results, it can be concluded that the January effect is present in the stock returns of the Vietnam stock market.

To test for the influence of the Lunar New Year on the January effect, the data is divided into two subsamples. The OLS and GARCH(1,1) are also applied for each subsample. Empirical findings from these models for each subsample are presented in Tables 4 and 5. The empirical results reveal that the January effect does not exist when the data used in the model include years where the Lunar New Year falls in January. However, the findings from the model using a subsample where the Lunar New Year falls in February confirms that the mean return of the Index is significantly positive in January at the 1% level. Based on these results, it can be concluded that the January effect is present in the stock returns of the Vietnam stock market and this anomaly is significantly influence by the timing of the Lunar New Year.

5. CONCLUSIONS

This paper investigates the January effect and the impact of Lunar New Year on the January effect for the Vietnam stock market. The Lunar New Year, also called *Tet* in Vietnamese, is the most important holiday and festival in Vietnamese culture. Similarly, the Lunar New Year is celebrated across those regions of Asia that traditionally followed the Chinese lunisolar calendar. People returning to their traditional homes to celebrate the Lunar New Year creates the largest seasonal migration of people on earth.

As discussed in the review of relevant literature, there is much financial evidence related to the January effect and some literature related to the effects of Lunar New Year in countries such as China and Taiwan, there is a gap in the published literature on the Vietnam stock market as it pertains to the effects of the Lunar New Year (Feng and Stewart, 2015; McGuinness and Harris, 2011; Mitchell and Ong, 2006, Wu, 2013; Yang and Lee, 2016). Similarly, while some evidence is available, there are few studies on the specific relationship between and effects of Lunar New Year on the January effect.

However, there is evidence that the Vietnam stock market is impacted by seasonality effects such as the January effect (Luu et al., 2016; Thach et al., 2019; Zaremba, 2015). Researchers have also determined that Vietnam is an emerging, or developing market, and is impacted by herding behaviour (Bui et al., 2018; Luu et al., 2016; Trang and Tho, 2017). Considering that the Vietnam stock market is impacted by investor behaviours such as herding and given that the Lunar New Year may fall in January in Vietnam, the authors posit that such a major holiday occupying the time and energy of most of the population of Vietnam should have a significant influence on Vietnam stock market returns and because of its proximity to Gregorian turn of the year on January 1st, may have substantial impact on the well document January anomaly. This study addresses these gaps and contributes to the existing literature by investigating the January effect and influences

of Lunar New Year on the January effect anomaly in the Vietnam stock market.

Weekly market index data from the Ho Chi Minh Stock Exchange (HOSE) are employed to investigate the January effect and the influences of Lunar New Year on the January anomaly in the Vietnam stock market. This data series is known as the VN-Index and is a composite capitalization weighted price index calculated from the prices of all common stocks traded on the Ho Chi Minh stock exchange. OLS (ordinary least square) regression analysis is used test for the January effect in the Vietnam stock market. In addition, to control for heteroskedasticity where the variance of the errors is not constant over time for financial time series GARCH (generalized autoregressive conditional heteroskedasticity) analysis is performed. This analysis is done on two separate datasets the first being for those years when the Lunar New Year occurs in the month of January and the second consisting of those years when the Lunar New Year occurs in the month of February.

The empirical results derived from the regression models indicate that the January effect is present in the Vietnam stock market when the entire sample period is employed. Furthermore, the study finds that the January effect is only significant when the Lunar New Year falls in February. However, the January anomaly is not significant when the Lunar New Year falls in January implying that cultural factors play a more important role than structural factors in influencing the prices of stocks in Vietnam.

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