SA20068

The January effect and Lunar New Year influences in frontier markets: Evidence from Vietnam stock market

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ABSTRACT - This paper aims to investigate the January effect and the effect of Lunar New Year on the January effect for Vietnam stock market. The data used in this study is weekly series of the market index (VN-Index) over the period from January 7th 2009 to December 26th 2018. To test for the presence of the January effect and the effect of Lunar New Year on the January anomaly, the OLS and GARCH(1,1) regression models are employed. The empirical findings obtained from the models confirm that the January effect is generally present in Vietnam stock market when the entire data is used. Especially, the study finds that the January effect is only existence when the Lunar New Year is in February, but it is disappeared when the Lunar New Year falls in January. These findings suggest that Lunar New Year has an impact on the January anomaly in Vietnam stock market.

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

JEL classification: 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 decades. Among such anomalies, the January effect has been seen as one of the most important patterns and it has been found in many stock markets. The January effect indicates that stock returns are abnormally higher on January than on other months of the year. Two explanations for this anomaly have been proposed in the literature, including the tax-loss selling hypothesis and the gamesmanship hypothesis. The difference between two hypotheses is that while tax-loss selling focuses on the behaviour of individual investors, gamesmanship concentrates on institutional investors. Specifically, the tax-loss selling hypothesis states that individual investors tend to sell stocks that decline in price toward the end of the year in order to realize capital losses and avoid income tax on capital gains. Returns of stocks are high in January because the selling pressure on the stocks diminishes at the end of the year and the stocks' prices increase during the first few trading days of the New Year to their equilibrium level. On the other hand, according to the gamesmanship hypothesis, the high return of stocks in January results from portfolio rebalancing by institutional investors in order to influence performance-based remuneration or to "window dress". Specifically, institutional investors tend to buy higher risk stocks at the beginning of the year in attempting to outperform the benchmark because they have sufficient time to correct mistakes before year end without jeopardizing their income. Then, the returns are locked by removing lesser known and risky stocks from their portfolios and replace them with well known, less risky stocks. The excess demand for risky stocks at the beginning of the year and excess supply of such stocks towards the latter part of the year lead to an increase in stock returns in January and down later on in the year. In addition, institutional investors can purge losers and buy winners and well known stocks towards the end of the year to "window dress" their annual report.

The existence of the January effect has been widely found in many markets. This anomaly is primarily reported for the U.S. stock-market (Wachtel, 1942; Rozeff and Kinney, 1976; Mehdian and Perry, 2002). In addition to the US markets, the January effect has also been observed in other developed markets, such as Japan (Reyes, 2001; Das and Rao, 2011), Canada (Tinic et al., 1987; Athanassakos, 2002), U.K and France (Das and Rao, 2011). Moreover, the January effect is recognized in emerging markets (Aggarwal and Rivoli, 1989; Wong et al., 1990; Fountas and Segredakis, 2002; Balinta and Gica, 2002; Asterioua and Kavetsosb, 2006). Although the January effect in stock returns has been significantly documented in the financial literature, with the author's best knowledge, no study has been found on this anomaly for Vietnam stock market. Like other emerging stock markets, it is hypothesized that the January effect is present in Vietnam stock market.

In the case January effect is existence, it is expected that Lunar New Year (Vietnamese New Year) can impact this anomaly in Vietnam stock market. Lunar New Year, also called *Tet* in Vietnamese, is the most important holiday and festival in Vietnamese culture. Vietnamese people believe that Lunar New Year holiday is an occasion to enjoy life after a full year hard-working. Therefore, they spend considerably money on food, clothes, decoration for the house, lucky money for relatives, a new car, a new motorcycle and vacations. As a result, many individual investors on the stock market would sell stocks in order to get cash for their demand. Based on this culture, it is hypothesized that the January effect can be disappeared when the Lunar New Year falls in January due to the withdrawal of capital from the stock market. This study tries to enrich the literature by testing for the existence of January effect and the impact of Lunar New Year on the January anomaly in Vietnam stock market. The rest of this paper is structured as follows. Section 2 describes the data and the methodology employed in this study. Section 3 presents the main findings of the empirical analysis. Finally, Section 4 concludes the study.

2. Data and methodology

2.1. Data

The data used to investigate the January effect and influences of Lunar New Year on the January anomaly in Vietnam stock market is primarily the weekly market index series (VN-Index). The VN-Index is a composite index calculated from prices of all common stocks traded on the Ho Chi Minh stock exchange (HOSE). Specifically, the Index is a market capitalization weighted price index which 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.

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 March 1st 2002 to August 14st 2019 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:

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

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

2.2. Methodology

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

$$R_t = \alpha + \beta D_t + \varepsilon_t \qquad (1)$$

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 on 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 homocesdaticity (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) generalised 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:

$$R_t = \alpha + \beta D_t + \varepsilon_t \qquad \varepsilon_t \approx N(0, h_t)$$

$$h_t = \omega + \delta h_{t-1} + \gamma \varepsilon^2_{t-1} \qquad (2)$$

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

During the studied period, the Lunar New Year falls either in January or February. Therefore, in order 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.

3. Empirical results

The empirical findings derived from OLS model with the entire sample presented in Table 1 show that the January effect is present in Vietnam stock market. Specifically, the average market return on January is significantly higher than other months of the year at the 5 percent 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 presence in the observed series. If 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 lags[1]. The results of ARCH-LM test strongly indicate that ARCH effect is presence 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 takes into account time-varying variance, is more appropriate than the OLS method in testing for the January effect in the market returns. The findings of GARCH (1,1) model consistently confirm that the January effect exist in the market returns at the one percent level of statistical significant. On the basis of these results, it can be concluded that the January effect is presence in the stock returns of the Vietnam stock market.

Table 1: 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.

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

Furthermore, to test for the influences of 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 subsamples. Empirical findings from these models for each subsamples are presented in Table 2 and Table 3. The empirical results reveal that the January effect does not exist when the data used in the model include years that have Lunar New Year falls in January. However, the finding obtained from the model using subsample with the Lunar New Year is in February confirm that mean return of the Index is significantly positive on January at the one percent level. On the basis of these results, it can be concluded that the January effect is presence in the stock returns of the Vietnam stock market and this anomaly is impacted by Lunar New Year.

Table 2: Empirical findings for subsample with 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 3: Empirical findings for subsample with 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.

4. Conclusions

This paper is devoted to investigating the January effect and the impact of Lunar New Year on the January effect for Vietnam stock market. The empirical results derived from the regression models indicate that the January effect is present in Vietnam stock market as the entire sample is employed. Furthermore, the study finds that the January effect is only existence when Lunar New Year is in February. The disappearance of the January anomaly when Lunar New Year falls in January implies that cultural factors play more important role than structural factors in influencing prices of stocks in Vietnam.

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