

SEASONALITY IN THE VIETNAM STOCK INDEX

H. Swint Friday, Texas A&M University- Corpus Christi, TX, USA

Nhung Hoang, Texas A&M University-Corpus Christi, TX, USA

ABSTRACT

This study examines seasonality in the Vietnam Stock Market Index over 10 years, since the market's establishment on July 28th, 2000 until December 31st, 2010. The study found significant positive returns in April and significant negative returns in July for the VN-Index. Also, the "Halloween Effect" or "Go away in May come back Halloween Day" effect is observed in the Vietnam Stock Market Index. The authors posit these results are partially driven by the rainy season in Vietnam where monthly rainfall reaches up to 1000 mm.

JEL: G11, G14

KEYWORDS: Halloween Effect, January Effect, Seasonality, Vietnam Stock Market

INTRODUCTION

Global stock market anomalies persist as a challenging puzzle for researchers. The more well-known phenomenon examined in numerous empirical studies include the January Effect and other seasonality anomalies such as the Halloween Effect. This analysis provides additional insight into this line of literature by examining seasonality in the Vietnam stock index specifically looking at the January Effect and the Halloween Effect. In addition, we provide evidence that rainfall especially in the rainy season is a possible explanation for the Halloween Effect we find in this market index.

The Efficient Market Hypothesis (EMH) is one of the most important hypotheses in applied finance with far reaching implications to the way traders and investors direct resources and allocate investment assets. The EMH holds that on average investors cannot consistently earn excess returns because financial markets incorporate information in an unbiased manner. In other words, new information will be nearly instantaneously incorporated into asset prices pushing markets to new equilibriums moment by moment ("Efficient Market Hypothesis" 2008).

However, the existence of seasonality in stock returns violates the EMH assumption if traders can use historical information to consistently earn excess returns. Nageswari and Selvam (2011) stated that the presence of seasonality including the Halloween effect, January effect, and 'Day of the Week Effect' in stock returns violates in particular the Weak Form of the EMH because investors can predict and time the markets based on past price patterns. Using historical data, investors and market participants may devise trading strategies and making abnormal profits. For instance, buying on Mondays and selling on Fridays or 'Selling in May and going away until Halloween day' are trading strategies where investors may make excess profits in stock markets.

We take the next step and test the Semi-Strong form of the EMH to determine if external fundamental factors are driving the seasonality widely documented in these markets. First, this study employs monthly historical returns of the VN-Index to determine the presence of seasonal patterns and abnormality of monthly stock returns from the Index's inception to 2010. In addition, we also hypothesize that weather and especially monthly rainfall levels are a possible explanation for the seasonal effects detected in the VN-Index. This particular vein of analysis has not been examined in previous studies. This research will also provide evidence on the possible need to introduce new derivatives into these

emerging markets to hedge against meteorological uncertainty similar to the weather derivatives traded in the US market.

PREVIOUS LITERATURE

Evidence of different seasonal effects has been observed in international markets around the world. Some of the more prominent effects include the January Effect and the Halloween effect. Wachelte (1942) was the first to document the January effect in stock returns. The phenomenon garnered little attention until Keim (1983) again reported observing abnormal January returns for New York Stock Exchange (NYSE) and American Stock Exchange (AMEX) common stocks over the period 1963–1979. Three proposed explanations for the January effect include the tax-lossing hypothesis (Roll 1983) and the gamesmanship hypothesis (Haugen and Lakonishok 1987). The third proposed cause of the January Effect is the window dressing hypothesis first introduced by Haugen and Lakonishok (1987).

The tax-lossing hypothesis states that individual investors tend to sell stocks that fall in price towards the end of the year to generate capital losses to offset and avoid tax on capital gains. Similarly, more volatile stocks also generate tax loss selling opportunities throughout the year. The selling pressure on these stocks subsides at the end of the year allowing these stocks to rebound during the first few trading days of January. The gamesmanship hypothesis proposes that institutional investors tend to buy higher risk and small stocks at the beginning of the year in an attempt to outperform the benchmark. The window dressing hypothesis on the other hand argues that institutional investors purge losers and buy winners and well known stocks towards the end of the year to “window dress” their annual report.

Further evidences of the US equities in value-weighted returns for 1802-2004 and in equal-weighted returns for 1927-2004 show that January effect in small-cap stock returns is remarkably consistent over time and does not disappear because of the Tax Reform Act of 1986 which moved the financial reporting year end from December 31 to October 31 for institutional investors (Haug and Hirschey, 2006). This finding suggests that the window dressing and tax-loss selling hypotheses do not completely explain the January effect; rather we should consider behavioral explanations. Conversely, Szakmary and Kiefer (2004) announced that both the S&P Midcap 400 and Russell 2000 futures markets for the period from 1982 to 2002 indicated a diminishing January effect [12]. Surprisingly, they found the high returns on the last trading day of December and negative across the first five trading days of January.

In addition to the US markets, the January Effect has also been observed in international markets. Monthly returns in the Canadian stock market demonstrated that size might not be a dominant determinant of the January effect. Athanassakos (2002) found abnormal January returns in both small and large cap stocks over the period from 1980 to 1998. Reyes (2001) published the January effect in the Japanese Stock Market which only observed in small-firm stocks.

The January effect is also found in emerging markets. Ayadi et al. (1998) reported abnormal January returns in Ghana. Yakob et al. (2005) provided evidence of January effect in Taiwan and Malaysia over the period 2001-2005. Similarly, monthly effects are also observed in many Asian Pacific countries, such as Australia, China, Hong Kong, India, Indonesia, and South Korea over the five year period from 2001 to 2005 (Yakob et. al). Robinson (2005) found the month of the year effect in the Jamaica Stock Exchange from the data over the period from January 1992 to December 2001.

However, the January phenomenon is not universal. Markets as varied as the Greek, Nigerian, Zimbabwean, Ukrainian, Kuwait, Amsterdam, and the Colombo stock markets do not exhibit the effect (Floros, 2008, Ayadi et al., 1998, Moosa, 2010, Van Der Sar, 2003, Yatiwella and Silver, 2011).

“Sell in May and go away until Halloween day” is an anonymous stock market axiom that has appeared

around the world in many financial articles. According to the Halloween strategystock returns during the six month period from May through October are significantly lower than during the other six month period stretching from November 1st to May 1st. Riepe (2003) analysis of the S&P 500 Index from January 1926 to March 2003 found mean monthly returns during the period from May through October was 0.77 percent. However, the mean monthly return the other six months of the year was 50 percent higher at 1.15 percent.

Bouman and Jacobsen (2002) provided additional support when they found the Halloween effect, in 36 of 37 countries they examined, including Argentina, Austria, Australia, Belgium, Brazil, Canada, Chile, Denmark, Finland, France, Germany, Greece, Hong Kong, Indonesia, Ireland, Italy, Japan, Jordan, Korea, Malaysia, Mexico, Netherlands, Norway, Philippines, Portugal, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, The United Kingdom, and the United States.

There are several explanations for this anomaly, such as the summer vacation period for many countries; changes in fundamental factors that drive the economy, for instance, the agricultural and consumer goods sector (Bouman and Jacobsen, 2002) and we posit that Asian markets may be influenced by the rainy season when monsoons and even typhoons are an ever present threat.

DATA AND METHODOLOGY

The research examines the VN-Index in over a 10 year period from its establishment on July 28th, 2000 to December 31st, 2010. Due to the small number of firms traded prior to 2005, the category mean monthly returns are also calculated from August 2000 through December 2004 and from January 2005 through December 31st, 2010.

VN-Index monthly returns are calculated from daily returns using the following equation:

$$\text{Monthly Return} = \frac{\text{Current month last day closing price} - \text{Prior month last day closing price}}{\text{Prior month last day closing price}} \quad (1)$$

RESULTS AND DISCUSSIONS

Tables 1 contains mean monthly returns and mean monthly trading volume for the VN-Index from August 2000 through December 2005, January 2006 through June 2010 and for the entire period August 2000 through June 2010. The sub-periods are examined because trading volume on the VN-Index increased substantially after 2005. Interestingly, the results show that November at 7.78 percent has the highest mean return for the 2000 through 2005 period while August with a mean of 9.94 percent has the highest mean return for the 2006 through 2010 period. However, the 4.98 percent return for January is the largest mean monthly return for the entire period from 2000 to 2010 providing support for the January Effect.

In addition, cumulative holding period returns are calculated and reported in Table I from May through October and from November through April for each sub-period and for the entire period. These holding period returns are calculated from the mean of the time series of mean monthly returns within each sub-period and for the entire period. This is done to provide insight into the Halloween effect where one sells in May and goes through Halloween day.

The results provide support for this phenomenon in both sub-periods and for the entire period. From 2000 through 2005, the May to Halloween period provided a cumulative return of 3.41 percent while the November through April period yielded an impressive 25.58%. The 2006 through 2010 sub-period saw

lower returns for both the May to Halloween period at 1.97 percent and the November through April period at a still impressive 12.95 percent.

To delve further into the January and Halloween effects for the Vietnam stock market, Table 2 provides monthly returns by year for the entire period from August 2000 through December 2010. Table II provides support for a January Effect, January returns over the 10 year period average nearly 4.98%. However, this high January return is driven by three years, 2001, 2004 and 2007 where returns ranged from nearly 17% to over 40%. In addition, six of 10 years are negative. This effect does not appear to be driven by tax losing selling which occurs when the previous year was one with poor performance or was highly volatile. Rather this is an indication of window dressing occurring in those years of high January performance with cumulative returns in November and December totaling 38% in 2000, 22% in 2003, and 40.5% in 2006.

Table 1: Monthly Returns of VN-Index for Sub-Periods

Month	2000-2005		2006-2010		2000-2010	
	Mean Return	Mean Volume	Mean Return	Mean Volume	Mean Return	Mean Volume
Jan	5.07%	297,656	4.88%	14,695,017	4.98%	6,841,911
Feb	3.52%	382,707	-1.00%	12,035,873	1.26%	5,679,601
Mar	0.83%	512,411	2.93%	19,492,107	1.88%	9,139,546
Apr	4.74%	407,834	3.89%	22,776,867	4.31%	10,575,576
May	3.48%	379,647	-0.44%	32,127,122	1.52%	14,810,317
Jun	3.82%	402,278	-1.16%	28,993,101	1.33%	13,398,106
Jul	-4.79%	388,708	-1.73%	20,694,501	-3.26%	9,618,614
Aug	-3.52%	491,939	9.94%	25,836,779	2.60%	11,052,289
Sep	-0.61%	593,627	1.14%	30,468,961	0.19%	13,041,683
Oct	5.42%	656,513	-5.16%	29,682,536	0.61%	12,750,689
Nov	7.78%	563,831	-1.61%	24,227,571	3.51%	10,423,722
Dec	1.45%	494,560	3.40%	29,330,298	2.34%	12,509,451
May-Oct	3.41%	485,452	1.97%	27,967,167	2.92%	12,445,283
Nov-Apr	25.58%	443,166	12.95%	20,426,289	19.65%	9,194,968

This table reports mean monthly returns and mean monthly trading volume for the VN-Index from August 2000 through December 2005, January 2006 through December 2010 and for the entire period August 2000 through December 2010. Cumulative holding period returns from May through October and from November through April for each sub-period are also calculated in this table.

To further explore the tax loss selling hypothesis, the following regression model is estimated:

$$\text{January return} = f(\text{prior years return, prior year standard deviation of returns}) \quad (2)$$

The results for this model are contained in Table 3. If tax-loss selling is an explanation, the coefficient for prior years return should be negative to generate greater tax-loss selling opportunities. The coefficient on prior year’s standard deviation should be positive as greater volatility in the market during the previous year should generate more tax gains and losses for investors to offset.

The coefficient on prior year’s standard deviation is positive but not significant. In addition, the prior year’s return coefficient is positive and significant providing evidence against tax-loss selling.

Tables 4 and 5 contain the mean monthly returns for the index for each month from August 2000 through December 2010. Table IV reports mean returns from November through April. Results in this table provide insight into both the January Effect and to see how the market does post Halloween through April while Table V contains the months May through October to see if there is any wisdom in the advice to “Sell in May and go away until Halloween day.”

Contained in Table 4 are the mean holding period returns that include a six month period in all years except 2000 when the calculation only includes two months because August 2000 was the first month of trading for the Vietnam market. The holding period return was positive 55 percent of the years with the mean holding period return across all years is a significant 26.11 percent. The best year was 2000-01 holding period with a 107 percent return for six month period.

Table 2: Monthly returns for the Vietnam Index from August 2000 to December 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Holding Period Return	Standard Deviation
2000								11.39%	6.47%	16.47%	17.72%	20.34%	95.69%	5.53%
2001	16.74%	0.87%	6.17%	17.00%	23.58%	21.71%	-13.99%	-29.88%	-17.53%	13.63%	8.86%	-16.83%	12.58%	18.70%
2002	-10.42%	-6.54%	3.39%	2.63%	-1.15%	-2.77%	-1.34%	-2.77%	-4.86%	-2.93%	0.29%	2.26%	-22.42%	2.84%
2003	-6.01%	-3.70%	-12.18%	9.24%	0.02%	0.40%	-4.13%	-1.50%	-1.96%	-2.14%	20.69%	1.26%	-3.47%	9.83%
2004	26.70%	25.81%	2.21%	-5.46%	-5.12%	-1.11%	-4.07%	-2.02%	0.73%	0.01%	-1.18%	3.11%	39.41%	1.97%
2005	-1.65%	1.16%	4.54%	0.29%	0.09%	0.85%	-0.40%	3.67%	13.48%	7.48%	0.26%	-1.47%	31.00%	5.99%
2006	2.31%	24.75%	25.29%	13.79%	-11.96%	-3.66%	-16.74%	21.32%	5.72%	-3.79%	21.42%	19.08%	129.30%	11.31%
2007	40.48%	8.42%	-4.61%	-12.44%	15.61%	-4.89%	-8.67%	-1.60%	12.58%	-1.78%	-9.63%	-6.17%	17.88%	8.46%
2008	-8.36%	-22.84%	-18.64%	0.26%	-20.56%	-2.09%	10.19%	20.57%	-17.73%	-23.63%	-9.72%	0.29%	-66.09%	17.38%
2009	-3.23%	-17.40%	13.33%	11.09%	22.28%	5.13%	8.55%	16.85%	6.06%	3.19%	-10.25%	-3.91%	54.85%	10.28%
2010	-6.79%	2.05%	-0.75%	6.73%	-7.59%	-0.30%	-2.01%	-7.43%	-0.92%	0.20%	0.12%	7.72%	-9.84%	5.38%
Percent Positive	40%	60%	60%	80%	50%	40%	20%	45%	55%	55%	64%	64%	64%	
Mean Return	4.98%	1.26%	1.88%	4.31%	1.52%	1.33%	-3.26%	2.60%	0.19%	0.61%	3.51%	2.34%	25.4% *	
Standard Deviation	17.20%	15.71%	12.36%	9.06%	14.62%	7.69%	8.57%	18.01%	17.86%	17.78%	19.95%	19.58%	54.6%	

This table reports monthly returns for the Vietnam Index from August 2000 to December 2010. Monthly returns are calculated by applying equation (1) indicated earlier. * Significant at the 10% level

Table 3: Regression Analysis for January Returns

	Coefficient	T-statistic
Intercept	-0.0314	-0.02
Prior Years Return	0.3554	1.99 *
Prior Years Standard Deviation	0.3736	0.26
R-squared	0.73	
F-statistic	4.36	**
D.F.	15	

This table represents regression analysis to test tax loss selling hypothesis where January return is the dependent variable and previous years holding period return and standard deviation are explanatory variables. ** Significant at the 5% level; * Significant at the 10% level

The results in Table 5 reveal that the majority of mean monthly returns for the period from May through October are negative. September and October are the only months where more than 50 percent of their mean monthly returns were positive. From 2001 through 2010, the mean returns for the month of July were only positive 20 percent of the time. In addition, the mean monthly return for the month of July during this period was a dismal -3.26 percent. The mean for all other months is positive with August having the highest at 2.60 percent.

Table 4: Mean monthly returns for “Buy at Halloween and Stay until May”

Buy at Halloween and Stay until May									
	Nov	Dec	Jan	Feb	Mar	Apr	Percent Positive	6 Month Holding Period Return	Standard Deviation
2000-01	17.72%	20.34%	16.74%	0.87%	6.17%	17.00%	100%	107.21%	7.74%
2001-02	8.86%	-16.83%	-10.42%	-6.54%	3.39%	2.63%	50%	-19.57%	9.71%
2002-03	0.29%	2.26%	-6.01%	-3.70%	-12.18%	9.24%	50%	-10.95%	7.37%
2003-04	20.69%	1.26%	26.70%	25.81%	2.21%	-5.46%	83%	88.22%	14.13%
2004-05	-1.18%	3.11%	-1.65%	1.16%	4.54%	0.29%	67%	6.27%	2.42%
2005-06	0.26%	-1.47%	2.31%	24.75%	25.29%	13.79%	83%	79.76%	12.23%
2006-07	21.42%	19.08%	40.48%	8.42%	-4.61%	-12.44%	67%	83.95%	19.16%
2007-08	-9.63%	-6.17%	-8.36%	-22.84%	-18.64%	0.26%	17%	-51.08%	8.46%
2008-09	-9.72%	0.29%	-3.23%	-17.40%	13.33%	11.09%	50%	-8.90%	11.86%
2009-10	-10.25%	-3.91%	-6.79%	2.05%	-0.75%	6.73%	33%	-13.11%	6.14%
2010	0.12%	7.72%					100%	25.43%	5.38%
Percent Positive	64%	64%	40%	60%	60%	80%	**	55%	
Mean Return	3.51%	2.34%	4.98%	1.26%	1.88%	4.31%	*	26.11%	**
Standard Deviation	19.95%	19.58%	17.20%	15.71%	12.36%	9.06%		54.07%	

*This table reports mean monthly returns for the VN-index from August 2000 through December 2010 for the months from November through April of each year. Remarkably, percent positive returns are relatively higher as compared to the percent positive returns for the months from May through October during the same period observed. ** Significant at the 5% level, * Significant at the 10% level*

Table 5 also contains the mean holding period returns that includes a six month period in all years but 2000 when the calculation only included three months because August 2000 was the first month of trading for the Vietnam market. By far, at 78.45 percent, the best holding period for the May through October period was 2009 with the worst period being 2010 with a 42.88 percent loss. Only 36 percent of the holding period returns for the May through October period from 2000 to 2010 were positive. And the mean each year's holding period return is only 3.45 percent. This return is substantially below that expected of most investors in emerging markets.

The results in Table 6 provide further insight into the Halloween effect by comparing holding period returns for the November to April and the May to October time period. Seventy-three percent of the time the post Halloween holding period outperformed the pre-Halloween holding period. However, those differences were only significant 40 percent of the time. The strategy was very effective from 2000 through 2007 with only the 2001-02 period when the November through April holding period did worse than the May through October holding period. From 2007 to 2010, the Halloween strategy only worked two of the four years. Even worse, during this time, the November through April holding period generated a 50% loss while the May through October only generated a 28% loss.

$$\text{Holding period difference} = (\text{Cumulative holding period from November through April}) - (\text{Cumulative holding period from May through October}) \quad (3)$$

The results over the last four years call into question the continued occurrence of the Halloween effect. Or, the factors that drive the effect were absent during this period. The authors posit that one of the factors that contribute to the Halloween effect in Vietnam is the rainy season that generally runs from May through October. Table VII contains monthly average rainfall and temperatures for Ho Chi Minh City, location of the Vietnam Stock Exchange. The May through October period on average experiences over 1700 millimeters of rainfall while the November through April period gets just over 240. In addition, Table 7 provides a side by side comparison of the average monthly rainfall and average mean monthly returns for the Vietnam Index from 2000 through 2010.

Table 5: Sell in May and Go Away until Halloween Day

Sell in May and go away until Halloween day									
	May	Jun	Jul	Aug	Sep	Oct	Percent Positive	6 Month Holding Period Return	Standard Deviation
2000				11.39%	6.47%	16.47%	100%	90.81%	NA
2001	23.58%	21.71%	-13.99%	-29.88%	-17.53%	13.63%	50%	-14.99%	22.84%
2002	-1.15%	-2.77%	-1.34%	-2.77%	-4.86%	-2.93%	0%	-14.85%	1.34%
2003	0.02%	0.40%	-4.13%	-1.50%	-1.96%	-2.14%	33%	-9.02%	1.64%
2004	-5.12%	-1.11%	-4.07%	-2.02%	0.73%	0.01%	33%	-11.16%	2.29%
2005	0.09%	0.85%	-0.40%	3.67%	13.48%	7.48%	83%	27.14%	5.41%
2006	-11.96%	-3.66%	-16.74%	21.32%	5.72%	-3.79%	33%	-12.85%	13.60%
2007	15.61%	-4.89%	-8.67%	-1.60%	12.58%	-1.78%	33%	9.27%	9.86%
2008	-20.56%	-2.09%	10.19%	20.57%	-17.73%	-	33%	-35.07%	18.13%
2009	22.28%	5.13%	8.55%	16.85%	6.06%	3.19%	100%	78.45%	7.55%
2010	-7.59%	-0.30%	-2.01%	-7.43%	-0.92%	0.20%	17%	-42.88%	3.57%
Percent Positive	50%	40%	20%	45%	55%	55%		36%	
Mean Return	1.52%	1.33%	-3.26%	2.60%	0.19%	0.61%		5.89%	
Standard Deviation	14.62%	7.69%	8.57%	18.01%	17.86%	17.78%		43.27%	

This table represents mean monthly returns for the VN-Index from August 2000 through December 2010 for the month from May through October each year.

Table 6: Difference in Returns for Two Cumulative Holding Periods Nov-April and May-Oct.

	Buy at Halloween and stay until May		Go away in May until Halloween day		Holding Period Difference	t-statistic for Difference > 0
	6 Month Holding Period Return	Standard Deviation	6 Month Holding Period Return	Standard Deviation		
2000-01	107.21%	NA	90.81%	NA	16.40%	
2001-02	-19.57%	12.57%	-14.99%	22.84%	-4.58%	-0.19
2002-03	-10.95%	5.72%	-14.85%	1.34%	3.90%	0.36
2003-04	88.22%	11.82%	-9.02%	1.64%	97.24%	6.49 **
2004-05	6.27%	14.06%	-11.16%	2.29%	17.44%	1.06
2005-06	79.76%	2.25%	27.14%	5.41%	52.62%	4.66 **
2006-07	83.95%	8.66%	-12.85%	13.60%	96.80%	5.03 **
2007-08	-51.08%	19.86%	9.27%	9.86%	-60.35%	-2.71
2008-09	-8.90%	9.52%	-35.07%	18.13%	26.18%	1.22
2009-10	-13.11%	11.97%	78.45%	7.55%	-91.56%	-5.08
2010	25.43%	5.33%	-42.88%	3.57%	68.31%	5.61 **
Percent Positive	55%		36%		73%	
Mean Return					20.22%	
Standard Deviation					59.23%	

This table reports difference in holding period return analysis for the November through April holding period and the May through October holding period from 2001 to 2010 for the Vietnam stock market. Significance test for positive difference are estimated at level of 10%.

There is a significant negative correlation of -62.79 percent indicating that when rainfall is up, the market is generally down. Though this provides some evidence that rainfall rates in Vietnam may drive the lower pre-Halloween returns. However, these results only show correlation not cause and effect. Additional analysis is needed to delve further into the causes of the Halloween effect in Vietnam.

Table 7: Average Monthly Rainfall and Average Daily Temperature for Ho Chi Minh City

	Average Monthly Rainfall (millimeters)	Average Daily Temperature		Mean Monthly Return (2000-2010)
		Min	Max	
Jan	14	21	32	4.98%
Feb	4	22	33	1.26%
Mar	12	23	34	1.88%
Apr	42	24	34	4.31%
May	220	25	33	1.52%
Jun	331	24	32	1.33%
Jul	313	25	31	-3.26%
Aug	267	24	32	2.60%
Sep	334	23	31	0.19%
Oct	268	23	31	0.61%
Nov	115	22	30	3.51%
Dec	56	22	31	2.34%
Total for November through April	243			
Correlation between Average Monthly Rainfall and Mean Monthly Return				-62.79% **
Total May through October	1733			

*This table reports average monthly rainfall and average daily temperature for Ho Chi Minh City, location of Vietnam Stock Exchange compared to mean monthly returns for VN-Index from 2000 through 2010. The correlation between average monthly rainfall and mean monthly return is tested the 5% level of significance. **Significant at the 5% level*

CONCLUSION

This analysis examines stock market seasonality in Vietnam from 2000 through 2010. Of all the months, January has the highest average return over the period. This result provides support for the January effect. However, January only has positive returns for 40 percent of the years observed. Additional analysis was conducted to see if the tax-loss selling hypothesis explained any portion of the higher average returns for January. The results found a significant positive relationship between the prior year's market return and the January return providing evidence against tax loss selling where one would expect a negative coefficient for the previous year's mean return and a significant positive coefficient on the prior year's standard deviation of returns because this should generate more loser and winners leading to additional trading to offset gains.

Analysis was also conducted to determine if the Halloween effect was present in the Vietnam market during this time. The Halloween effect is based on age old market advice to "Go away in May and come back Halloween day." Historically markets around the world have shown a proclivity for lower performance during the summer months and tend to bounce back after Halloween doing well through April. April was a good month to exit the market. April exhibited the next highest mean return just behind January and had positive returns 80 percent of the years observed. The results provide support for the Halloween effect with the post Halloween period outperforming the pre-Halloween period 73 percent of the time. The effect primarily occurred between 2000 and 2007. After that, the results are mixed.

Analysis of rainfall rates was examined as a possible explanation for the Halloween effect. There was a significant negative correlation between average monthly rainfall measures and mean monthly stock returns indicating that rain could be an explanation. Additional analysis is needed to determine if there is a cause and effect relationship between increased rainfall and lower market returns for Vietnam.

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BIOGRAPHY

H. Swint Friday is Professor of Finance at Texas A&M University-Corpus Christi. His research interests include Agency Theory and Corporate Governance, Real Estate Investment Trusts, Seasonality and Abnormalities in Sock Returns, and Financial Planning. His articles appear on several academic journals such as *Journal of Financial Research*, *National Tax Journal*, *Journal of Real Estate Portfolio Management*, *The Assessment Journal*, *The Journal of Real Estate Research*, *Institutional Real Estate Securities*, *Journal of Alternatives Investments*, and *Financial Management Journal*. He can be reached at Swint.Friday@tamucc.edu, Office: (361)-825-2498.

Nhung Hoang is currently employed at the World Bank and can be reached at hnhung88@yahoo.com. Her research includes the *Journal of Global Business Development*.