Superstition in the Philippine Stock Market

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ABSTRACT

This study focused on: (1) the Friday the 13th effect (Kolb & Rodriguez, 1987), (2) the October effect (BMO Financial Corp., 2012, September), and (3) the ghost month (Pesobility Blog, 2013, July 31). Making use of the PSEi as the proxy for the Philippine stock market (Almonte, 2004, 2012a, 2012c, 2012d, 2013b, 2014), it seemed that the local stock market was superstitious.

Keywords: Friday the thirteenth (13th) effect, October effect, ghost month, stock returns

1. INTRODUCTION

1.1. Overview

One of the definitions of superstition was "a belief or practice resulting from ignorance, fear of the unknown, trust in magic or chance, or a false conception of causation" (Merriam-Webster, Incorporated, 1997, p. 1183). Superstitions have been around for ages, present in different parts of the world (Sanguinarius, n.d.).

Kolb and Rodriguez (1987) were credited for apparently being the first to conduct a study linking superstition and the stock market. Specifically, Kolb and Rodriguez (1987) investigated if the stock market was affected by Friday the thirteenth (13th). Kolb and Rodriguez (1987) hypothesized that Friday the 13th showed a lower average return compared to other Fridays. The results of their study gave birth to another calendar anomaly – the "'Friday the Thirteenth' effect" (Kolb & Rodriguez, 1987, p. 1387). Although Kolb and Rodriguez (1987) coined the term "'Friday the Thirteenth' effect" (p. 1387), the name of this particular superstitious calendar anomaly had been regularly used by different researchers (e.g. Chamberlain, Cheung, & Kwan, 1991; Coutts, 1999; Patel, 2009; Botha, 2013; Auer & Rottmann, 2014).

In addition to Friday the 13th, other so-called superstitious calendar anomalies included the October effect (BMO Financial Corp., 2012, September; J. J. F. Lago, personal communication, June 29, 2015) and the ghost month (Pesobility Blog, 2013, July 31; Lim, 2013, August 1; J. J. F. Lago, personal communication, June 29, 2015).

According to BMO Financial Corp. (2012, September), the October effect referred to "the widely held belief that October is a bad month for the markets" ("Debunking the 'October effect'", para. 1). The basis for the concern had something to do with (1) earnings announcements and forecasts and (2) stock market crashes (in 1929, 1987, and 2008) that occurred during October (BMO Financial Corp., 2012, September). While BMO Financial Corp. (2012, September) discussed the superstitious attribute of the October effect, they also disclosed that on the basis of the S&P 500 index there were

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several months worse than October. Likewise, some of those in the industry, for instance Joseph James F. Lago, Head of Research for one of the brokerage firms in the Philippines, did not believe in the October effect (J. J. F. Lago, personal communication, June 29, 2015).

On the other hand, the ghost month was described as ". . . the time when the gods open the Gates of Hell and allow the spirits from the underworld to roam on Earth among the living" (Lim, 2013, August 1, "The Ghost Month", para. 1). To a number of Chinese, the ghost month was an unlucky period for beginnings (Pesobility Blog, 2013, July 31; Lim, 2013, August 1). It occurs on ". . . the seventh month of the lunar year" (Lim, 2013, August 1, "The Ghost Month", para. 1). As per Pesobility Blog (2013, July 31), August was used as a proxy for the ghost month most likely for the purpose of "simplicity" ("August a.k.a 'ghost month' is coming [what to expect]", para. 3). As such, investors ought to anticipate that the equity market would be down throughout August (Pesobility Blog, 2013, July 31). Apart from the superstitious background of the ghost month (Pesobility Blog, 2013, July 31; Lim, 2013, August 1), it is the time when a lot of investment fund managers are on holiday (Lim, 2013, August 1; J. J. F. Lago, personal communication, June 29, 2015). Additionally,

> the month of August falls smack at the heart of the Northern Hemisphere's summer break. For whatever reason, from China to Europe to North America, it is the peak vacation month of the Northern Hemisphere's summer. It was eventually labeled as ghost month for markets as most market participants and/or professionals are away thus trading turnover thins out. (J. J. F. Lago, personal communication, June 29, 2015).

Thus, based on the insights of J. J. F. Lago (personal communication, June 29, 2015), it would appear that there was some dispute regarding the superstitious nature of the October effect and ghost month. Nonetheless, this study investigated if the Philippine stock market, through the PSEi (Almonte, 2004, 2012a, 2012c, 2012d, 2013b, 2014), displayed the October effect and the ghost month on top of the Friday the 13th effect.

1.2. Hypotheses

Hypotheses one, two, and three were brought by the works of Kolb & Rodriguez (1987), BMO Financial Corp. (2012, September), and Pesobility Blog (2013, July 31), respectively.

Hypothesis 1 The Philippine stock market displayed the Friday the 13th effect.

Hypothesis 2 The Philippine stock market displayed the October effect.

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Hypothesis 3 The Philippine stock market displayed the ghost month.

2. LITERATURE

2.1. Friday the 13th Effect

Kolb and Rodriguez (1987), using variations of the CRSP indices as the sample, investigated the Friday the 13th effect by using data for more than 23 years. They (Kolb & Rodriguez, 1987) found that said effect was present in every index.

Soon after the study of Kolb and Rodriguez (1987) was published, Dyl and Maberly (1988) conducted a follow-up research by using one index, the S&P 500, and data for 47 years. Dyl and Maberly (1988) found the following: in five out of the six periods, Friday the 13th generated positive and better mean returns compared to other Fridays (but statistical significance was only present in one) and the only period wherein Friday the 13th generated a negative and a lesser mean return compared to other Fridays was during the 1970s (statistical significance was present).

Building on the works of Kolb and Rodriguez (1987) and Dyl and Maberly (1988), Chamberlain et al. (1991) studied the Friday the 13th effect alongside the turn-of-the-month effect. They (Chamberlain et al., 1991) used the S&P 500 index as the sample and more than 50 years of data.

Leaving the US setting, Coutts (1999), examined the existence of the Friday the 13th effect in the United Kingdom by using the Financial Times Industrial Ordinary Shares Index as the sample and more than 59 years of data. Coutts (1999), determined the following: in most cases, Friday the 13th generated positive and better mean returns compared to other Fridays (but statistical significance was not found) and the periods wherein Friday the 13th generated inferior mean returns compared to other Fridays did not yield significant results.

Going back to the US setting, Patel (2009) examined the existence of the Friday the 13th effect by using 58 years of S&P 500 data and more than 36 years of NASDAQ data. For the S&P 500 index, Patel (2009) discovered the following: in four out of the seven periods, Friday the 13th produced positive and better mean returns compared to other Fridays (but statistical significance was only identified in one) and in the three periods wherein Friday the 13th generated inferior mean returns compared to other Fridays statistical significance was only seen in one. For the NASDAQ index, Patel (2009) noted the following: in three out of the five periods, Friday the 13th produced positive and better mean returns compared to other Fridays (but statistical significance was not observed) and in the two periods wherein Friday the 13th generated inferior mean returns compared to other Fridays statistical significance was only evident in one period.

Using samples from other parts of the world, Botha (2013) studied the Friday the 13th effect in Kenya, Morroco, Nigeria, South Africa, and Tunisia.

Dyl and Maberly (1988), Chamberlain et al. (1991), Coutts (1999), Patel (2009), and Botha (2013) ascertained that the Friday the 13th effect was not found.

Using several Asian equity markets, Auer and Rottmann (2014) deduced that the Friday the 13th effect was only evident in the Philippines.

The influential work of Kolb and Rodriguez (1987) paved the way for other researchers to conduct studies on the Friday the 13th effect. However, as observed by

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Botha (2013) and Auer and Rottmann (2014), most of the research disagreed with their conclusion.

2.2. October Effect and Ghost Month

A related study about bonds that have undergone default was made by Ward and Huffman (1997). One of the observations of Ward and Huffman (1997) was that the securities had significantly lesser average returns in October versus other months.

The research of Bley and Olson (2003) composed of the S&P500 index, equity real estate investment trust (REIT) index, and mortgage REIT index. Bley and Olson (2003) used monthly data and included calendar anomalies (among others) in their study. Bley and Olson (2003) noticed the following (among others): (1) for the S&P500 index, in three out of six periods, the coefficients of October were negative (but statistical significance was only seen in two); in four out of six periods, the coefficients of August were negative (but statistical significance was only observed in one); (2) for the equity REIT index, in five out of six periods, the coefficients of October were negative (but statistical significance was only evident in three); in four out of six periods, the coefficients of August were negative (but statistical significance was only found in one); and (3) for the mortgage REIT index, in four out of six periods, the coefficients of October were negative (but statistical significance only manifested in two); in three out of six periods, the coefficients of August were negative (but statistical significance was only detected in two).

Almost a decade later, Chia and Liew (2012) studied the Nikkei 225 index using monthly data for almost 10 years. Chia and Liew (2012) found (among others) that October and August did not produce significant results.

Furthermore, the research of Ahsan and Sarkar (2013) regarding the Dhaka Stock Exchange All Share Price Index utilizing monthly data for almost 26 years showed the following (among others): (1) in three out of three periods, the coefficients of October were positive (but statistical significance was only observed once) and (2) in two out of three periods, the coefficients of August were positive (but statistical significance was not evident) and the only period wherein the coefficient of August was negative did not yield a significant result.

Additionally, the paper of Sahoo (2014) about the BSE-100 index revealed (among others) that while the coefficient of October was negative it was not significant; also, the coefficient of August was positive (but not significant).

Hence, Ward and Huffman (1997) observed the October effect while Bley and Olson (2003), generally, did not. Chia and Liew (2012), Ahsan and Sarkar (2013), and Sahoo (2014) also did not find the October effect.

Given the results reported by Bley and Olson (2003) regarding August [the ghost month, according to Pesobility Blog (2013, July 31)], largely, the ghost month was not apparent. Other researchers, Chia and Liew (2012), Ahsan and Sarkar (2013), and Sahoo (2014), likewise did not observe the ghost month.

3. METHODOLOGY

3.1. Definition of Friday the 13th Effect, October Effect, and Ghost Month

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This research used the definitions of Kolb and Rodriguez (1987) and BMO Financial Corp. (2012, September) with regards to the Friday the 13th effect and October effect, respectively. Following Pesobility Blog (2013, July 31), this study also used August to mean the ghost month.

3.2. Data

According to The Philippine Stock Exchange, Inc. (2011, May, p. 2), the PSEi was formerly known as "Phisix" or "PSE Composite Index". This study, like Almonte (2004, 2012a, 2012c, 2012d), required a daily data frequency of the PSEi. Also, like Almonte (2004, 2012c, 2012d), the closing amounts of said index were used. The raw data was taken in two tranches: (1) data from the last trading day of May 1992 to the last trading day of December 2013 was acquired from Bloomberg L.P. (2014) and (2) data from the first trading day of January 2014 to the last trading day of May 2015 was acquired from Bloomberg L.P. (2015). The two data sets were combined so that daily returns from the first trading day of June 1992 to the last trading day of May 2015 could be calculated. Returns were found by applying the formula found in Reilly and Brown (2012, pp. 5-6). The calculation for returns was the same as that of Almonte (2012a). Microsoft Excel for Mac 2011 [version 14.1.0 (110310)] was used to prepare the data while XLSTAT for Mac (version 2015.3.01.19253) took care of the statistical calculations.

Like what was done by Almonte (2004, 2012a, 2012b, 2012c, 2013a) data preparation included the use of numeric assignments for grouping purposes.

Related to Almonte (2012c), it was assumed that index values with zero change in return were arrived at by copying the index value for the last trading day so data cleaning was carried out.

As with previous research about superstition (e.g. Dyl & Maberly, 1988; Chamberlain et al., 1991; Coutts, 1999; Patel, 2009; and Botha, 2013), subperiods were used. The two subperiods in this study were: (1) the first trading day of June 1992 to the last trading day of December 2003 and (2) the first trading day of January 2004 to the last trading day of May 2015.

3.3. Statistical Tools

Using Addinsoft (ca. 1995-2015a) as a reference, two tests for normality were used: (1) the Jarque-Bera test and (2) the Shapiro-Wilk test. Both tests showed that the daily returns for June 1992 to May 2015, June 1992 to December 2003, and January 2004 to May 2015 did not adhere to a normal distribution (for all three periods, $p < .001$). Thus, nonparametric tests were applied (like Almonte 2004, 2012a, 2012b, 2012c, 2013a, 2013b, 2014).

For the Friday the 13th effect, like Kolb and Rodriguez (1987), Dyl and Maberly (1988), Coutts (1999), Patel (2009), and Botha (2013), returns of Friday the 13th were compared to returns of other Fridays. In addition to what Kolb and Rodriguez (1987) did, and related to Auer and Rottmann (2014), other days (including other Fridays) were included: In this paper, returns of Friday the 13th were also compared to returns of other days (including other Fridays) as part of testing the first hypothesis.

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For the October effect, like Ward and Huffman (1997) and using the definition of BMO Financial Corp. (2012, September), returns of October were compared to returns of other months of the year.

For the ghost month, adapting the process of Ward and Huffman (1997) and using the definition given by Pesobility Blog (2013, July 31), returns of August were compared to returns of other months of the year.

Similar to the statement of Auer and Rottmann (2014), previous researches like those of Kolb and Rodriguez (1987), Dyl and Maberly (1988), Ward and Huffman (1997), Coutts (1999), Patel (2009), and Botha (2013) made use of a t-test (a parametric test). Its nonparametric counterpart is the Mann-Whitney test (Siegel & Castellan, Jr., 1988; Addinsoft, ca. 1995-2015b). Patel (2009) also used a Mann-Whitney test in his paper. Hence, the Mann-Whitney test was utilized as the primary test (see Tables 1 and 3) for all hypotheses (see Section 3.3, para. 2-4).

Given the definitions used in this study [see Sections 1.1 (para. 2, 4-5) and 3.1], a one-tailed test was employed in all primary tests (see Tables 1 and 3). Furthermore, the utilization of a one-tailed test was also justified by the results reported by Auer and Rottmann (2014) about the Friday the 13th effect in the Philippine scenario.

Enthused by the work of Kolb and Rodriguez (1987), secondary assessments (see Tables 2 and 4) were performed in order to provide a more comprehensive analysis – these included looking for the occurrence of the day-of-the-week effect and then comparing Friday the 13th versus the day with the worst mean return [via a Mann-Whitney test (one and two-tailed tests were performed; the employment of a one-tailed test corresponded to Kolb and Rodriguez (1987) and, to a certain degree, Auer and Rottmann (2014) while the utilization of a two-tailed test was in line with Siegel and Castellan, Jr. (1988))] and examinations for the month-of-the-year effect.

Similar to Almonte (2013a), both the day-of-the-week and month-of-the-year effects were investigated by using the approach of Almonte (2012a). For emphasis, (1) the hypothesis for the day-of-the-week effect originated from Almonte (2004, 2012a) while the hypothesis for the month-of-the-year effect arose from Almonte (2012a) [although these hypotheses were not explicitly mentioned in this paper] and (2) to study for the day-of-the-week and month-of-the-year effects, the researcher employed the Kruskal-Wallis test and the process developed by Steel-Dwass-Critchlow-Fligner for the multiple pairwise comparisons test (Addinsoft, ca. 1995-2015c; Almonte, 2012a, 2012b, 2013a).

4. RESULTS

4.1. Friday the 13th Effect

Friday the 13th versus other Fridays and Friday the 13th versus other days produced consistent results (Table 1, Panels A and B): (a) the mean returns for Friday the 13th were inferior than that of other Fridays or other days and (b) the Friday the 13th effect was evident during the periods June 1992 to May 2015 (Fridays the 13th versus other Fridays had a $p = .043$ while Friday the 13th versus other days generated a $p = .089$) and January 2004 to May 2015 (both Friday the 13th versus other Fridays and Friday the 13th versus other days gave a $p = .070$).

The results in Table 1 (Panels A and B) strengthened the conclusions of Kolb and Rodriguez (1987) and Auer and Rottmann (2014).

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Table 1. Friday the 13th Effect

	June 1992 to May 2015	June 1992 to December 2003	January 2004 to May 2015
Panel A. Friday the 13th versus Other Fridays			
Selected Summary Statistics			
Friday the 13th			
Mean return	-0.003	-0.005	-0.002
No. of observations	37	16	21
Other Fridays			
Mean return	0.001	0.001	0.001
No. of observations	1,070	548	522
Mann-Whitney Test			
U	16,510.000††	3,827.000	4,440.000†
Expected value	19,795.000	4,384.000	5,481.000
Variance (*U*)	3,655,476.667	412,826.667	496,944.000
Panel B. Friday the 13th versus Other Days (including Other Fridays)			
Selected Summary Statistics			
Friday the 13th			
Mean return	-0.003	-0.005	-0.002
No. of observations	37	16	21
Other Days			
Mean return	0.000	0.000	0.001
No. of observations	5,614	2,858	2,756
Mann-Whitney Test			
U	90,521.000†	21,235.000	23,541.000†
Expected value	103,859.000	22,864.000	28,938.000
Variance (*U*)	97,835,178.000	10,955,666.667	13,398,294.000

Notes: †$p < .10$, one-tailed (lower-tailed) test; ††$p < .05$, one-tailed (lower-tailed) test.
The mean returns were in decimal format.
Specific time periods: (1) the first trading day of June 1992 to the last trading day of May 2015, (2) the first trading day of June 1992 to the last trading day of December 2003, and (3) the first trading day of January 2004 to the last trading day of May 2015.
Following Almonte (2014), please refer to the Methodology section for details regarding references used.

Tuesday was the worst day-of-the-week (Table 2, Panel A). The Kruskal-Wallis test (Table 2, Panel A) displayed the day-of-the-week effect. For the period June 1992 to May 2015, $p < .001$. For the period June 1992 to December 2003, $p = .002$. For the period January 2004 to May 2015, $p = .021$. The multiple pairwise comparison tests revealed the following: (1) for the period June 1992 to May 2015, there were significant differences between Tuesday and Wednesday, $p = .001$; Tuesday and Thursday, $p = .001$; and Tuesday and Friday, $p = .001$; (2) for the period June 1992 to December 2003, there was a significant difference between Tuesday and Friday, $p = .003$; and (3) for the period January 2004 to May 2015, there were significant differences between Tuesday and Wednesday, $p = .035$; and Tuesday and Thursday, $p = .027$.

After considering the day-of-the-week results in this paper together with the findings of Almonte (2004, 2012a), Tuesday is developing an awful reputation in the Philippine stock market.

Furthermore, even though Friday the 13th had inferior mean returns compared to Tuesday, the Mann-Whitney test showed that the differences were not statistically significant for all three periods (Table 2, Panel B).

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Table 2. Supporting Tests for Friday the 13th Effect

	June 1992 to May 2015	June 1992 to December 2003	January 2004 to May 2015
Panel A. Day-of-the-week Effect			
Selected Summary Statistics			
Monday			
Mean return	0.000	0.000	0.000
No. of observations	1,094	566	528
Tuesday			
Mean return	-0.001	-0.002	-0.001
No. of observations	1,154	585	569
Wednesday			
Mean return	0.001	0.001	0.001
No. of observations	1,160	586	574
Thursday			
Mean return	0.001	0.001	0.001
No. of observations	1,136	573	563
Friday			
Mean return	0.001	0.001	0.001
No. of observations	1,107	564	543
Kruskal-Wallis Test			
K (Observed value)	25.568***	16.890***	11.509**
Panel B. Friday the 13th versus Tuesday			
Selected Summary Statistics			
Friday the 13th			
Mean return	-0.003	-0.005	-0.002
No. of observations	37	16	21
Tuesday			
Mean return	-0.001	-0.002	-0.001
No. of observations	1,154	585	569
Mann-Whitney Test[ab]			
U	20,171.000	4,701.000	5,291.000
Expected value	21,349.000	4,680.000	5,974.500
Variance (*U*)	4,241,334.667	469,560.000	588,488.250

Notes: $^{**}p < .05$, two-tailed; $^{***}p < .01$, two-tailed.
[a]two-tailed test.
[b]one-tailed test.
Kruskal-Wallis test: *K* (Critical value) = 9.488, for all three periods; *df* = 4, for all three periods.
The mean returns were in decimal format.
Specific time periods: (1) the first trading day of June 1992 to the last trading day of May 2015, (2) the first trading day of June 1992 to the last trading day of December 2003, and (3) the first trading day of January 2004 to the last trading day of May 2015.
Following Almonte (2014), please refer to the Methodology section for details regarding references used.

4.2. October Effect and Ghost Month

With regards to the October effect (Table 3, Panel A), the mean returns of October versus other months were the same for all three periods. Referring to the results of the Mann-Whitney test, the October effect did not exist (Table 3, Panel A).

The results in Table 3 (Panel A) concurred with the findings of Bley and Olson (2003), Chia and Liew (2012), Ahsan and Sarkar (2013), and Sahoo (2014).

On the other hand, for all three periods, the mean returns of August were inferior to the mean returns of other months (Table 3, Panel B). Looking at the results of the Mann-Whitney test, the ghost month was evident for all three periods (Table 3, Panel B). For the period June 1992 to May 2015, $p = .004$. For the period June 1992 to December 2003, $p = .029$. For the period January 2004 to May 2015, $p = .043$.

The results in Table 3 (Panel B) regarding the ghost month diverged with the findings of Bley and Olson (2003), Chia and Liew (2012), Ahsan and Sarkar (2013), and Sahoo (2014). A plausible reason for the observance of the ghost month in the local stock market was foreigners (Chinese and other nationalities) were major players (J. J. F.

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Lago, personal communication, June 29, 2015). As pointed out in Section 1.1 (para. 5), they could have deferred making stock transactions by reason of superstition (Pesobility Blog, 2013, July 31; Lim, 2013, August 1) and/or by being on break (Lim, 2013, August 1; J. J. F. Lago, personal communication, June 29, 2015).

Table 3. October Effect and Ghost Month

	June 1992 to May 2015	June 1992 to December 2003	January 2004 to May 2015
Panel A. October Effect			
Selected Summary Statistics			
October			
Mean return	0.000	0.000	0.001
No. of observations	492	261	231
Other Months			
Mean return	0.000	0.000	0.001
No. of observations	5,159	2,613	2,546
Mann-Whitney Test			
U	1,266,523.000	336,476.000	297,285.000
Expected value	1,269,114.000	340,996.500	294,063.000
Variance (*U*)	1,195,505,388.000	163,394,156.250	136,151,169.000
Panel B. Ghost Month			
Selected Summary Statistics			
August			
Mean return	-0.001	-0.002	0.000
No. of observations	480	261	219
Other Months			
Mean return	0.001	0.000	0.001
No. of observations	5,171	2,613	2,558
Mann-Whitney Test			
U	1,151,546.000†††	316,855.000††	260,498.000††
Expected value	1,241,040.000	340,996.500	280,101.000
Variance (*U*)	1,169,059,680.000	163,394,156.250	129,686,763.000

Notes: ††p < .05, one-tailed (lower-tailed) test; †††p < .01, one-tailed (lower-tailed) test.
The mean returns were in decimal format.
Specific time periods: (1) the first trading day of June 1992 to the last trading day of May 2015, (2) the first trading day of June 1992 to the last trading day of December 2003, and (3) the first trading day of January 2004 to the last trading day of May 2015.
Following Almonte (2014), please refer to the Methodology section for details regarding references used.

August was the worst month during the periods June 1992 to May 2015 and June 1992 to December 2003 (Table 4). The Kruskal-Wallis test (Table 4) displayed the month-of-the-year effect for June 1992 to May 2015 and June 1992 to December 2003. For the period June 1992 to May 2015, p = .044. For the period June 1992 to December 2003, p = .013. The multiple pairwise comparison tests revealed the following: (1) for the period June 1992 to May 2015, there was a significant difference between August and December, p = .015; and (2) for the period June 1992 to December 2003, there were significant differences between July and December, p = .016; and August and December, p = .006.

The Kruskal-Wallis test (Table 4) sustained the results of the Mann-Whitney test regarding the October effect and ghost month (Table 3, Panels A and B). However, the results in Table 4 (for the periods June 1992 to May 2015 and June 1992 to December 2003) diverted from the findings of Almonte (2012a, 2012c).

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Table 4. Supporting Test for October Effect and Ghost Month

	June 1992 to May 2015	June 1992 to December 2003	January 2004 to May 2015
Month-of-the-year Effect			
Selected Summary Statistics			
January			
Mean return	0.001	0.002	0.001
No. of observations	482	232	250
February			
Mean return	0.000	0.000	0.001
No. of observations	453	215	238
March			
Mean return	0.000	-0.001	0.001
No. of observations	493	235	258
April			
Mean return	0.001	0.000	0.001
No. of observations	441	212	229
May			
Mean return	0.001	0.001	0.001
No. of observations	478	229	249
June			
Mean return	0.000	0.000	0.000
No. of observations	470	246	224
July			
Mean return	0.000	-0.001	0.002
No. of observations	500	264	236
August			
Mean return	-0.001	-0.002	0.000
No. of observations	480	261	219
September			
Mean return	0.001	0.000	0.002
No. of observations	484	258	226
October			
Mean return	0.000	0.000	0.001
No. of observations	492	261	231
November			
Mean return	0.000	0.000	0.000
No. of observations	443	230	213
December			
Mean return	0.002	0.003	0.001
No. of observations	435	231	204
Kruskal-Wallis Test			
K (Observed value)	20.118**	23.911**	7.900

Notes: $^{**}p < .05$, two-tailed.
Kruskal-Wallis test: *K* (Critical value) = 19.675, for all three periods; *df* = 11, for all three periods.
The mean returns were in decimal format.
Specific time periods: (1) the first trading day of June 1992 to the last trading day of May 2015, (2) the first trading day of June 1992 to the last trading day of December 2003, and (3) the first trading day of January 2004 to the last trading day of May 2015.
Following Almonte (2014), please refer to the Methodology section for details regarding references used.

5. CONCLUSION

The Philippine stock market looked to be superstitious. The Friday the 13th effect, as well as the ghost month, were discovered; although the ghost month had a stronger presence than the Friday the 13th effect. Even those who absolutely do not consider the ghost month to be superstitious (e.g. J. J. F. Lago, personal communication, June 29, 2015) could possibly agree that even just finding the Friday the 13th effect in the local market was a little ironic given that, as per Miller (2015), the religion of most Filipinos was Roman Catholic.

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REFERENCES

[1] Addinsoft (ca. 1995-2015a). *Normality tests.* Retrieved from http://www.xlstat.com/en/products-solutions/pro.html
[2] Addinsoft (ca. 1995-2015b). *Non parametric tests on two independent samples.* Retrieved from http://www.xlstat.com/en/products-solutions/pro.html
[3] Addinsoft (ca. 1995-2015c). *Kruskal-Wallis test.* Retrieved from http://www.xlstat.com/en/products-solutions/pro.html
[4] Ahsan, A. F. M. M., & Sarkar, A. H. (2013). Does January effect exist in Bangladesh? *International Journal of Business and Management, 8*(7), 82-89. doi:10.5539/ijbm.v8n7p82 or url: http://dx.doi.org/10.5539/ijbm.v8n7p82
[5] Almonte, C. K. S. (2004). The day-of-the-week effect in the Philippine stock market: January 3, 2000 to July 23, 2004. Working paper. Retrieved from http://www.dlsu.edu.ph/research/centers/cberd/pdf/papers/Working%20Paper%20Series%202004-10.pdf
[6] Almonte, C. K. S. (2012a). Calendar effects in the Philippine stock market. *International Journal of Information Technology and Business Management, 3*(1), 64-80. Retrieved from http://www.jitbm.com/
[7] Almonte, C. K. S. (2012b). The day-of-the-week effect in selected balanced funds in the Philippines. *International Journal of Information Technology and Business Management, 3*(1), 40-49. Retrieved from http://www.jitbm.com/
[8] Almonte, C. K. S. (2012c). Testing for the quarter-of-the-year effect in ten Asian stock indices. *International Journal of Information Technology and Business Management, 6*(1), 31-36. Retrieved from http://www.jitbm.com/
[9] Almonte, C. K. S. (2012d). Assessing the Sharpe ratio of equity funds in the Philippines. *International Journal of Information Technology and Business Management, 7*(1), 17-24. Retrieved from http://www.jitbm.com/
[10] Almonte, C. K. S. (2013a). The day-of-the-week and month-of-the-year effects after the U.S. recession: Converting selected foreign currencies to the Philippine Peso. *International Journal of Information Technology and Business Management, 9*(1), 6-12. Retrieved from http://www.jitbm.com/
[11] Almonte, C. K. S. (2013b). The risk-adjusted performance of equity and balanced funds in the Philippines. *International Journal of Information Technology and Business Management, 14*(1), 49-64. Retrieved from http://www.jitbm.com/
[12] Almonte, C. K. S. (2014). Performance evaluation of bond and money market mutual funds via the Modigliani and Modigliani measure. *Review of Integrative Business & Economics Research, 3*(1), 408-417. Retrieved from http://www.sibresearch.org/riber.html

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[13] Auer, B. R., & Rottman, H. (2014). Is there a Friday the 13th effect in emerging Asian stock markets? *Journal of Behavioral and Experimental Finance, 1*, 17-26. doi:10.1016/j.jbef.2014.01.001 or url: http://dx.doi.org/10.1016/j.jbef.2014.01.001

[14] Bley, J., & Olson, D. (2003). *An analysis of relative return behavior: REITs vs. stocks.* EFMA 2003 Helsinki Meetings. doi:10.2139/ssrn.391687 or url: http://dx.doi.org/10.2139/ssrn.391687

[15] Bloomberg L.P. (2014). *Philippines PSE Composite Index – Index Value* [source of raw data (from the last trading day of May 1992 to the last trading day of December 2013)]. Retrieved from a Bloomberg terminal.

[16] Bloomberg L.P. (2015). *Philippine Stock Exchange PSEi Index* [source of raw data (from the first trading day of January 2014 to the last trading day of May 2015)]. Retrieved from a Bloomberg terminal.

[17] BMO Financial Corp. (2012, September). *Superstition stalks the market.* Retrieved from https://www.bmo.com/mybmoretirement/pdf/resource-library/10-325-299_BHBMI431_Superstition_stalks_the_market_7-11.pdf

[18] Botha, F. (2013). Stock returns and Friday the 13th effect in five African countries. *African Review of Economics and Finance, 4*(2), 247-253. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=96365667&site=ehost-live

[19] Chamberlain, T. W., Cheung, C. S., & Kwan, C. C. Y. (1991). The Friday the thirteenth effect: Myth or reality? *Quarterly Journal of Business and Economics, 30*(2), 111-117. Retrieved from http://search.proquest.com/docview/194737977?accountid=28547

[20] Chia, R. C., & Liew, V. K. (2012). Month-of-the-year and symmetrical effects in the Nikkei 225. *International Organization of Scientific Research–Journal of Business and Management (IOSR–JBM), 3*(2), 68-72. Retrieved from http://iosrjournals.org/iosr-jbm.html

[21] Coutts, J. A. (1999). Friday the thirteenth and the Financial Times Industrial Ordinary Shares Index 1935-94. *Applied Economics Letters, 6*(1), 35-37. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=1607662&site=ehost-live

[22] Dyl, E. A., & Maberly, E. D. (1988). The anomaly that isn't there: A comment on Friday the thirteenth. *The Journal of Finance, 43*(5), 1285-1286. Retrieved from http://www.jstor.org/stable/2328221

[23] Kolb, R. W., & Rodriguez, R. J. (1987). Friday the thirteenth: 'Part VII'–A note. *The Journal of Finance, 42*(5), 1385-1387. Retrieved from http://www.jstor.org/stable/2328534

[24] Lim, J. H. (2013, August 1). Fearing the ghost month? *BPI Asset Management: Investment Insights,* Issue no. 19, Series 2013. Retrieved from https://www.bpiassetmanagement.com/upload/files/investment-research/investment-insights/investment%20insights%2008012013.pdf

[25] Merriam-Webster, Incorporated (1997). Superstition. *Merriam-Webster's collegiate dictionary (Tenth edition)* (1183). Springfield, MA: *Author*.

[26] Microsoft Excel for Mac 2011 [14.1.0 (110310)] [computer software]. Software used to store and prepare the data. Copyright 2010 by Microsoft Corporation.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[27] Miller, J. (2015). *Religion in the Philippines.* Retrieved from http://asiasociety.org/religion-philippines
[28] Patel, J. B. (2009). Recent evidence on Friday the thirteenth effect in U.S. stock returns. *Journal of Business & Economics Research, 7*(3), 55-58. Retrieved from http://cluteinstitute.com/ojs/index.php/JBER/article/view/2271/2319
[29] Pesobility Blog (2013, July 31). August a.k.a "ghost month" is coming [what to expect] [Web log post]. Retrieved from http://blog.pesobility.com/2013/07/august-aka-ghost-month-is-coming-what.html#.VYwKWEs578t
[30] Philippine Stock Exchange, Inc., The (2011, May). *Policy on index management.* Retrieved from http://www.pse.com.ph/resource/filetemplate/file/pseindexguide.pdf
[31] Reilly, F. K., & Brown, K. C. (2012). An overview of the investment process. *Analysis of investments & management of portfolios (Tenth international edition)* (3-29). Canada: South-Western, Cengage Learning.
[32] Sahoo, R. (2014). Month of the year effect on stock market return and volatility. *Paripex – Indian Journal of Research, 3*(7), 1-2. Retrieved from http://theglobaljournals.com/paripex/
[33] Sanguinarius (n.d.). *Origins of popular superstitions.* Retrieved from http://sangi.sanguinarius.org/creative/OriginsOfPopularSuperstitions.pdf
[34] Siegel, S., & Castellan, N. J., Jr. (1988). Two independent samples. *Nonparametric statistics for the behavioral sciences (Second edition)* (102-167). USA: McGraw-Hill, Inc.
[35] Ward, D. J., & Huffman, S. P. (1997). Seasonality in the returns of defaulted bonds: The January and October effects. *Quarterly Journal of Business and Economics, 36*(3), 3-10. Retrieved from
http://search.proquest.com/docview/194739014?accountid=28547
[36] XLSTAT for Mac (2015.3.01.19253) [computer software]. Statistical software used in the study. Copyright 1995-2015 by Addinsoft. A version of the software was available from http://www.xlstat.com/en/download.html

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)