SEMI-MONTHLY EFFECT: EVIDENCE FROM THE MAURTIAN OFFICIAL STOCK MARKET

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The main aim of this paper is to examine the presence of semi-monthly effects on the Mauritian official stock market. Using data from August 2006 to May 2009, the results seem to suggest that the mean returns in the second half of the calendar month is significantly lower than the mean returns in the first half of the calendar month for the whole sample period. In general, this may suggest possible gains when trading during the first half of the month. However, when individual years are investigated separately, the paper reports an insignificant semi-monthly effect across all years. This undoubtedly calls for further research using larger samples of data as well as using data from individual securities to confirm this stock market anomaly.

JEL Classification: G12, G14.

1.0 INTRODUCTION

Calendar anomalies in stock prices have been of great significance to financial scholars and practitioners. Supports in favour of these anomalies have been considered as well-built evidence against efficient market hypothesis. In deed, there are abundant literature of this field in support of such calendar anomalies as day of the week, month of the year, turn of the month, holiday, and intraday effects. This study focuses on semi-monthly effects which have been less explored relative to the other anomalies in the literature.

Among the pioneers of empirical evidence for semi-monthly is the research study carried by Ariel (1987). In particular, Ariel (1987) claimed that in the US equity markets, it seems that positive average returns were earned only around the commencement and during the first half of calendar months, and zero average returns during the second part. In this respect, Penman's (1987) claimed that this anomaly could be justified based on the tendency by firms to state good news during the first half of the month and bad news during the second half. Similarly, Jaffe and Westerfield (1989) reported the intra-month effects on the Australian market but not for Japanese, Canadian and British markets.

In similar vein, Lakonishok and Smidt (1988) reported that the cumulative returns over the four day periods from the last trading day of the month to the third trading day of the following month was greater than the return over the entire month for the US market.

The evidence regarding the monthly anomalies has been mainly reported from developed equity markets. However, recently, there has been some attention being paid to developing countries since these markets have started to attract the worldwide investors.

In general, there has been little published work on the Mauritian Equity market. The previous on the Mauritian Equity market relates to anomalies related to day of the week or month of the year. To the author's knowledge, there has not been any published article on the semi-monthly effect.

To this effect, this paper mainly aims to study semi-monthly effects, if any, in the Mauritian stock market for the period August 2006 to May 2009.

2.0 DATA AND METHODOLOGY

Daily observations of the SEMDEX ranging between August 4, 2006 and May 30, 2009 are used for the purpose of this study. The SEMDEX is an index of prices of all listed shares and each stock is weighted according to its share in the total market capitalisation. In its computation, the current value of SEMDEX is expressed in relation to a base period, which is chosen as the 5th July 1989, with an index value of 100. Daily percentage returns on the SEMDEX are calculated as follows:

$Rt = \ln (I_t / I_{t-1})$ ..... (1)

where *It* and *Rt* refer to SEMDEX number and return on the SEMDEX on day *t*, respectively. Returns for each day of the week are separately calculated for each year as well as for the whole period.

In order to test to test the equality of mean returns across halves of calendar months, the following ordinary least squares (OLS) regression is run for the period 2006 to 2009:

$Rt = B_1 + B_2 D_{1t} + ut$ ..... (2)

where D_{1t} = 1 if day *t* is in the second half of a calendar month (exclusive of the fifteenth day of a month), and 0 otherwise. The OLS coefficient B_1 is the mean returns corresponding to the first half of calendar months while the estimate of B_2 is equal to the difference between the sample means of the first and second halves of calendar months. The stochastic disturbance term is indicated by *ut*.

The null hypothesis to be tested is:

$B_2 = 0$ ..... (3)

The above regression is also repeated for each year to check whether the reported results change across years.

3.0 Analysis of Data and Results

Descriptive statistics for the first and second halves of calendar months for the period August 2006 to May 2009 are provided in Table 1.

Table 1: Descriptive statistics for SEMDEX returns

YEAR [i]	2006	2007	2008	2009	2006-2009
Average- FIRST HALF	0.004935**	0.002383***	-0.000711	0.001159	0.001480**
S.Deviation- FIRST HALF	0.013890	0.008546	0.013887	0.017325	0.012945
P-VALUE	0.0176	0.0028	0.5792	0.6416	0.0372
Average- SECOND HALF	0.001583	0.001111	-0.002805**	0.000676	-0.000285
S.Deviation- SECOND HALF	0.007202	0.010101	0.015427	0.013237	0.012502
P-VALUE	0.1192	0.2122	0.0402	0.7167	0.6642
Average- ALL DAYS	0.005343***	0.000275	-0.001082***	5.19E-05	0.000530
S.Deviation- ALL DAYS	0.012766	0.006687	0.006172	0.007507	0.012759
P-VALUE	0.0018	0.5327	0.0062	0.9458	0.2741

For the first half of calendar months, mean daily return is about 0.15% and significant at the 5% level for the period 2006-2009. Mean daily return in the second half is negative but insignificant. On a yearly analysis, it is interesting to note that average returns are generally higher for the first half of the calendar months than for the second half of the calendar months across all years. In fact, the highest average returns are reported in the first half of calendar months for the year 2006 while the lowest average returns are reported in the second half of the calendar months for the year 2008. These patterns may seem to indicate that there is a semi-monthly effect on the SEM. With regards to volatility, it is observed that the standard deviation is slightly lower in the second half of the calendar months for the whole period 2006 till 2009. On a yearly analysis, a mixed result is observed as the standard deviation is higher for the year 2006 and 2009 only for the first half of the calendar months.

Additionally, Table 2 shows the regression results from for the stock market returns for the period 2006 to 2009.

Table 2. Regression Results

$R_t = B_1 + B_2 D_{1t} + u_t$			
YEAR[ii]	B_1	B_2	F-Statistics
2006	0.004935**	-0.003352	2.346219
p-value	0.0155	0.1376	0.128809
2007	0.002383***	-0.001272	1.146536
p-value	0.0058	0.2853	0.285316
2008	-0.000711	-0.002094	1.252887
p-value	0.6002	0.2641	0.264094
2009	0.001159	-0.000483	0.024640
p-value	0.5989	0.8756	0.875590
2006-2009	0.001480**	-0.001765**	3.355936*
p-value	0.0335	0.0335	0.067390

The regression results for each year as well as the whole period are given in Table 2. For each given year, the coefficients of the second half of the calendar months are negative suggesting the returns are generally lower in the last two or three weeks of the month. However, these coefficients are statistically insignificant across all the years. Also, it seems that mean returns for first half of the months are significantly positive for all years with the exception of 2008 and 2009.

It is observed that results from the yearly analysis are similar for the other countries. For example, Cadsby and Ratner (1992) claimed no turn of the month effect in Japan, Hong Kong, Italy and France while Agrawal and Tandon (1994) reported no turn of the month effects in eight of eighteen countries they investigate. Also, Wong (1995) reported that intra-month effects were non-existent in the stock markets of Singapore, Malaysia, Hong Kong, Taiwan and Thailand.

However, for the whole period 2006-2009, the estimate of the sample mean daily return of the first half is positive and differs from zero at the 5% level. Also, the regression results show that returns are lower in the second half of the calendar month. This result is statistically significant at 5% level. In particular, one expect that for the whole period, mean daily return for the first half is significantly greater than that for the second half.

The above result is partially consistent with the findings of Balaban (1995) who reported that the estimate of the sample mean daily return of the first half is positive and differs from zero at the 1% level on the Turkish market.

4.0. DISCUSSION AND FURTHER RESEARCH

The empirical results of this paper verify whether or not there exists semi-monthly on the SEMDEX return data for the period August 2006 to May 2009. When individual years are considered separately, the paper reports an insignificant semi-monthly effect across all years.

Further research must be considered to investigate the effect of the days of the month across individual securities. In this respect, other factors such as risk and size can be added to the model to see the individual effect of the semi-month effect. Also, the research can be extended to other different time periods to support this anomaly. Finally, one can consider the development enterprise market in Mauritius to investigate the pattern of this anomaly.

Endnotes

[i] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

[ii] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

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