The Effect of Anomaly in Monthly Trading in Amman Stock Exchange over the Period 2002-2006

Idries M. Al-Jarrah, Basheer M. Khamees, Fayez Salim Haddad

ABSTRACT

This study employs highly-structured regression models to examine the existence of the monthly trading effect in Amman Stock Exchange (ASE) over the 2002-2006 period. Utilizing monthly returns of 231 stocks listed in ASE, we present strong evidence that supports the existence of monthly effect in ASE over the study period. In addition, the findings on individual stock returns revealed the subsistence of this time pattern with insignificant changes over the study period. These findings suggest that market participants in ASE seemed to be not able to learn from past experience trading strategies to exploit such calendar when making their investment decisions. Our results are somehow similar to the findings of other studies conducted earlier on ASE and conform to the findings of other studies on other emerging capital markets. These findings clearly go against the Weak-Form level of market efficiency.

Keywords: Monthly Effect Anomaly; Amman Stock Exchange ASE, Anomalies; Calendar Effect, Efficient Market Hypothesis.

JEL Classification Numbers: K22, G28, C22.

INTRODUCTION

Since Fama (1970) introduced the theoretical framework of market efficiency, the efficiency of capital market has received enormous concern by empirical research. A great deal of research was directed to investigating the randomness of stock price movements to examine the extent of efficiency in various capital markets. Among the common calendar phenomena examined is the Monthly Effect anomaly. If the market returns follow a seasonal pattern, then it violates the weak-form level of market efficiency. Haugen and Jorion (1996) emphasized that any calendar effect should be a temporary phenomenon though they found that the January Effect still exists.

The capital market literature on monthly effect has confirmed the January and year-end effect (see for example, Gao and Kling, 2005). Various explanations have been suggested for this anomaly. Some research suggests that this phenomenon is related to tax-loss selling strategies and behavioral aspects. Dyl (1977), Branch (1977), and Lakonishok et al. (1991) stressed the importance of the taxation and window dressing by institutional investors for the observed year-end effect.

Shefrin and Statman (1985) suggested the so-called disposition effect for year-end calendar effect where the losers hold too long and winners are sold to early. Thus, the higher return in January aims to realize losses in December to reduce the taxable gains. Rozeff and Kinney (1976) proposed that the abnormal returns in January are due to new information provided by the firms at the end of the fiscal year. Finally, Corhay et al. (1987) suggested that there is a significant positive relationship between risk premium and average portfolio returns in the month of January.

As the taxation of capital gains is common in developed countries, tax motivated selling might be observable on the ASE, similar to the situation in other emerging markets. In addition, given the Jordanian calendar year ends in December, the institutional trading for the purpose of window-dressing might be important in this context. The speculative behavior and the

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dominance of large shareholders in ASE make investigation of Calendar Effect valuable. Thus, we contribute to understanding the monthly effect phenomenon in ASE.

The rest of the study is organized as: Section 2 gives a brief review of the related literature. Section 3 presents a brief description for ASE and section 4 introduces the study methodology and empirical findings. Then, section 5 offers explanations for the existence of monthly anomaly in the ASE. Finally, concluding remarks summarizing our main findings are presented in section

Literature Review

As for the empirical literature conducted on ASE, El-Erian and Kumar (1995) are among the early studies that examined the extent of efficiency in ASE. The authors utilized daily and weekly data of the general index and found returns to be positively serially correlated and the market to be weak-form inefficient.

Maghayereh (2003) investigated the seasonality of monthly stock returns and January effect anomaly in ASE utilizing daily returns over the period 1994-2002. Using the GARCH and the GJR models, Maghayereh found no evidence of monthly seasonality or January effect in the ASE returns.

Rawashdeh and Squalli (2006) testd the random walk hypothesis and weak-form efficiency using daily data for the sectoral indexes and the general index of the ASE. Contrary to Maghayereh (2003), the researchers found that the random walk and weak-form efficiency hypotheses are rejected for all sectors and for the general index. Several explanations for their findings are presented. Firstly, the movements of daily prices of quoted companies in ASE were restricted to a price limit of 5%. Secondly, companies listed in ASE are subject to less investment research. Thirdly, the market may be strongly influenced by noise traders and thus trading is done on the basis of fad or just speculation. Lastly, information is impounded first in large capitalized firms, and then small capitalized firms, with a lag.

Al-Zoubi and Al-Zu'bi (2007) also examined the stock returns behavior in ASE, market efficiency, the time-varying risk–return relationship, the persistence of the stock volatility and the leverage effect for the holding period 1990-2000. Similar to the results of Rawashdeh and Squalli (2006), Al-Zoubi and Al-Zu'bi found that the ASE returns have a significant serial correlation, implying stock market inefficiency. They attributed the existence of market inefficiency due to the lack of information resource that investors are trying to find.

Among the more recent studies conducted on ASE is that of Al-Khouri and Ajlouni (2007) who examined the behavior of daily stock return volatility around the price limit hit for 159 securities listed in ASE over 1994-1995. The authors inspect whether daily return volatility for stocks-hit price limit are expected to be lower (higher) in the post-limit hit period than in the pre-limit hit period, which will be consistent with the so-called overreaction hypothesis. The results indicated that stocks hit experiences their highest level of volatility on the day when stocks-hit reach their upper (or lower) daily price limits of 5%, and decreases (increases) one day after the hit. The authors concluded that such results are more consistent with the overreaction hypothesis and that the price-limit technique is effective in reducing the volatility.

Alabed and Al-Khouri (2008) also analyzed intra-day liquidity dynamics for stocks listed on the ASE by using a cross-market index to estimate different liquidity proxies over the period from 1st January, 2005 to 31st August, 2005. Their analysis demonstrates that volume, bid-ask spread, instant trades, and number of large trades exhibit a U-shape, liquidity ratio has a smooth L-shape, while waiting-time-to-trade exhibits an inverse U-shape. Their results also reveal that the ASE's highest activity levels are at market open and close suggesting a possible high information asymmetry level at open and intensive large traders' activities at close.

Finally, Al-Fayoumi et al. (2009) investigated the dynamic interactions among the daily returns of the ASE indices over the period 2000- 2007. They examined the multivariate cointegration and the causal linkages among general, financial, industrial and services indices. They found that these indices are related via one cointegrating vector in the long-run. The Vector Error Correction

Model results indicate that there is a strong short-run causality running from general, financial, and industry to other indices, but there is no evidence that service index Granger causes returns in other indices. The variance decomposition and impulse response analyses confirm these results and indicate that the financial is the most influential sector in the ASE, while services is the least integrated with other sectors. Therefore, the service sector may give the best diversification opportunity within the ASE.

This study utilizes the daily stock returns of the securities traded in ASE to determine whether the monthly effect exists in this exchange over the period 2002-2006. In addition to examining the monthly effect, this study will address a further significant aim which is the change of this phenomenon effect over time.

A Brief Description of Amman Stock Exchange (ASE)

The Amman Financial Market, known as Amman Stock Exchange was established in 1976, and it has initiated its business at the beginning of 1978. ASE aims to ensure that the citizens have the incentive to save and that savings are employed efficiently.

Major restructuring aiming at improving the overall workings of the market has been conducted over the past two decades. These reforms aimed to upgrade the transparency and trading settings of the market. In 1997, the regulations governing trading in ASE has been reformulated to allow foreign investors to own up to 100% of the shares of all listed companies. In addition, the ASE shifted into electronic trading system in the year 2000. The new system creates a better environment for trading by using the recent technology, which is supposed to enhance the ASE settings and developments. These reforms enhanced the foreign investors' participation in the market and contributed to higher levels of competition. These reforms are supposed also to upgrade transparency and safety for traders and investors.

Al-Fayoumi et al. (2009) pointed out that ASE is one of the leading capital markets in the Middle East. The market is organized into the first and second market for the trading of listed securities. The first market is governed by more stringent listing rules, but otherwise differs slightly from the second market. Most securities trading involve equities, and most of trading is conducted on the first market.

As for the source of liquidity in ASE, Al-Khouri and Ajlouni (2007) argued that the source of liquidity in ASE is the limit orders book since there are no market makers or specialists with special quoting obligations or trading privileges. Investors place orders in the order book through brokers who are connected directly to the electronic trading system. All limit orders in the order book face the same priority rules which determine how orders are matched. A limit order or a market order is assigned an entry time and placed in the order book. All orders are listed first by price and second by the time of submission in the order book.

Finally, the trading process in ASE consists of four main phases: pre-opening, opening, continuous trading, and closing. At the pre-opening phase (9.30–10.00am), orders are submitted by the brokers to the system, and are then recorded and ranked according to priorities on the order book. An Indicative Equilibrium Price (IEP) is calculated and disseminated each time a new order is entered or modified. At the opening face (10.00am), the system matches the orders present on the order book and determines the last IEP price as the opening price. Mutually compatible orders are executed if the estimated IEP is inside the authorized brackets. During the continuous pricing session (10.00–12.00am), orders submitted to the book are executed if there are corresponding orders on the opposite side of the order book (Alabed and Al-Khouri, 2009).

Table 1 presents summary statistics on the ASE over the sample period 2000-2006. As the table shows, all the performance indicators have witnessed impressive growth over the past few years. By the end of 2006, number of listed companies at ASE has reached 230 with a market capitalization of more than JD 14 billion, which represents 233.9% of the GDP; non-Jordanian ownership in companies listed at the ASE by the end of the year 2006 represents 45.5% of total market value.

Table1: Main Indicators for ASE 2000-2006 (figures are rounded to the nearest digit**)**

Indicator	2000	2001	2002	2003	2004	2005	2006
Number of Listed companies	160	160	160	160	190	200	230
Market Capitalization (JD million)	3,510	4,480	5,030	1,860	3,790	16,870	14,210
Daily Average Trading Value (JD million)	1.4	2.8	3.8	7.7	15.4	69.1	58.7
No. of Traded shares (million)	230	340	460	1,010	1,340	2,580	41,400
Market Capitalization/ GDP (%)	58	72	80	117	185	327	234
Non-Jordanian Ownership (%)	42	39	37	39	41	45	46

Source: Adapted from various Annual Reports of Amman Stock Exchange

The afore-mentioned performance indicators clearly demonstrate the success of ASE in deepening and increasing the efficiency and liquidity of the market and spreading the culture of investment.

Study Methodology and Empirical Findings

This study utilizes daily stock returns to compute the average monthly returns of the securities traded in ASE to determine whether the so-called monthly effect exists in the market and then to determine the subsistence of such phenomenon over time.

The study sample consists of 230 stocks comprising all securities traded in ASE over the period from January 2002 to November 2006; making 13,629 observations. This period will reveal the impact of the new regulations that govern the trading in ASE and the impact of other continuing developments to the trading system in ASE, addressed earlier. Furthermore, this number of observations is sufficient to determine the monthly effect in ASE and to obtain precise estimates for the change of calendar effect over time.

Except for the year 2006, table (2) shows that average investor in ASE has realized positive return over all the years under study. Furthermore, the returns, on average, are positive for all the months except for February.

The highest levels of returns were realized on January while the lowest were realized on February. This is an extremely important point that should be noticed. Thus, these indicators suggest a pattern of return that exists in ASE which opposes the efficient market hypothesis.

Table 2: The Average Daily Returns of ASE, Monthly Categorized, over 2002-2006

	2002	2003	2004	2005	2006	Average
January	NA	0.40%	2.98%	2.99%	0.37%	**1.68%**
February	-1.20%	-1.76%	-0.85%	2.20%	-4.11%	**-1.14%**
March	-0.42%	1.22%	-1.75%	2.69%	-0.68%	**0.21%**
April	-1.03%	1.81%	-0.31%	2.45%	0.21%	**0.62%**
May	2.35%	2.51%	1.01%	-0.36%	-1.20%	**0.86%**
June	1.42%	1.28%	1.70%	4.73%	-3.75%	**1.08%**
July	-0.35%	2.20%	1.61%	-1.77%	-0.94%	**0.15%**
August	-0.75%	2.46%	-0.82%	-0.18%	1.98%	**0.54%**
September	-0.37%	0.97%	1.75%	-0.29%	-0.35%	**0.34%**
October	-0.29%	0.27%	0.68%	0.45%	-0.95%	**0.03%**
November	1.23%	2.43%	3.30%	0.71%	-2.27%	**1.08%**
December	-0.29%	2.51%	0.55%	-2.34%	NA	**0.11%**
Average	**0.03%**	**1.36%**	**0.82%**	**0.94%**	**-1.06%**	**0.42%**

Source: Adapted from statistical reports of ASE over 2006-2006

As for the returns and according to various activity sectors in ASE, Table (3) shows that the lowest returns is realized for investors in Banks sector while the highest is realized in Services sector. These levels of returns for various sectors, however, might truly reflect the levels of risks that exist in these sectors.

Table 3: The Average Daily Returns of ASE, Grouped According Industry over 2002-2006

Year	Banks	Industry	Insurance	Services	Average
2002	-0.71%	0.15%	0.20%	-0.02%	**0.03%**
2003	2.09%	1.28%	0.96%	1.44%	**1.36%**
2004	1.81%	0.48%	1.15%	0.88%	**0.82%**
2005	0.73%	0.37%	1.60%	1.51%	**0.94%**
2006	-2.59%	-0.56%	-1.68%	-1.11%	**-1.06%**
Average	**0.27%**	**0.35%**	**0.44%**	**0.54%**	**0.42%**

Source: Adapted from various statistical reports of ASE over 2006-2006

To examine whether the descriptive statistics show a clear positive or negative time effect for the returns in ASE over the study period, Table (4) summarizes the average returns as well as the upper and lower boundaries of a 95% confidence interval. When we inspect the average daily returns over the period 2002-2006, we can notice that lower interval is negative for all the months except January. This shows that the average daily returns for this month has never been negative over the study period. Therefore, a clear positive or negative effect cannot be confirmed except for this month.

Nevertheless, the serial dependency of returns on time needs to be examined to correctly derive these confidence intervals. The subsequent part deals with this matter by employing regression and autoregressive models on individual daily stock returns of all listed companies in ASE over the study period. This will also enable estimating the shifts of the monthly pattern over time.

Table 4: The Average Daily Returns for Amman Stock Exchange ASE over 2002-2006

	Lower	Mean	Upper
January	0.27%	1.68%	3.10%
February	-2.56%	-1.14%	0.27%
March	-1.20%	0.21%	1.63%
April	-0.79%	0.62%	2.04%
May	-0.56%	0.86%	2.28%
June	-0.34%	1.08%	2.49%
July	-1.27%	0.15%	1.57%
August	-0.87%	0.54%	1.96%
September	-1.07%	0.34%	1.76%
October	-1.38%	0.03%	1.45%
November	-0.33%	1.08%	2.50%
December	-1.31%	0.11%	1.52%

Source: Adapted from statistical reports of ASE over 2006-2006.

CONCLUSIONS

We start our inferential analysis by examining the hypothesis of an efficient market in ASE over the study period. The hypothesis is that of the randomness in stock price movements. This hypothesis states that returns follow a geometric random walk; that is, the logarithmic prices follow a random walk.

The first difference of stocks returns at time t labeled r_t is a stationary process. Inserting a set of dummy variables denoted d_j controls for monthly effects. Note that we use June as reference month.

$$r_t = \alpha + \sum_{j=1}^{11} \beta_j d_j + \varepsilon_t \qquad (1)$$

Where α_i and β_j are coefficients to be estimated, j is the month index, ε_t is a random error. If the efficient market hypothesis is true, one would expect that monthly effects do not exist. Hence, we test the joint hypothesis that all coefficients B_j are jointly not significantly different from zero.

Utilizing White (1980) estimators, one obtains robust t-values in the presence of heteroskedasticity. White (1980) has derived a heteroskedasticity consistent covariance matrix estimator in the presence of heteroskedasticity of unknown form. The White Covariance matrix is given by:

$$\hat{\sum} W = \frac{T}{T-k}(X'X)^{-1}\left(\sum_{t=1}^{T}\mu_t^2 x_t x_t'\right)(X'X)^{-1} \qquad (2)$$

Where X defines the matrix x_{tk} with t rows and k columns. $_TX'$ is the transpose of matrix X; and $X'X = \sum_{t=1} x_t' x_t$. T is the number of observations, k is the number of regressors, and μ_t is the least squares residual. Thus, OLS with robust standard errors estimates the regression equation (1) for ASE is presented in table (5).

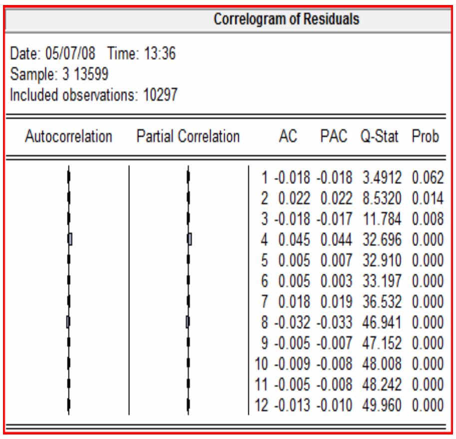
The Lagrange Multiplier (LM) test is utilized for testing for autocorrelation (though the reported value of Durbin-Watson Statistics is 2.042). The F-statistic value for this test equals 3.566 with a p-value =0.0589. Thus, the null hypothesis of on-serial autocorrelation (H_0: $\rho = 0$) is not rejected at 5% significance level.

To confirm that the autocorrelation with error term is not a problem in the model, we re-estimate the first model reported in table 5 with the Autoregressive Process of Order One [AR (1)] term to capture autocorrelation in the errors and to model the dynamic effects of error term (the new model becomes model 2 in table 5).

The AR(1) error representation is that $e_t = \rho e_{t-1} + \nu_t$, where e_t is the errors obtained from the model, e_{t-1} is the e_t lagged values and ρ is the coefficient that determines the existence of correlated errors. ν_t is a new random error term. It follows that the e_t will be uncorrelated when $\rho = 0$, because $e_t = \nu$. In the AR(1) representation, the biased standard errors are corrected to get standard errors that are known as HAC (heteroskedasticity and autocorrelation consistent) standard errors.

In the autoregressive model, the p =-0.0187 with a standard error of regression S.E. = 0.063. We test the redundancy of AR (1) in this model utilizing Wald Test. The value of F test with (1, 10056 degree of freedom) equals 0.442 with a p-value equals 0.506. Thus, we do not reject the restriction implied by the AR (1) error model. Similar conclusion is also arrived based on the inspection of autocorrelation function (ACF) and partial autocorrelation function (PACF) for securities returns (with 12 lags) in ASE, presented in Figure (1). All these findings confirm that our estimated model 1 is free of serial correlation.

Figure (1): The ACF and PACF for Securities Returns in ASE


Correlogram of Residuals

Date: 05/07/08 Time: 13:36
Sample: 3 13599
Included observations: 10297

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.018	-0.018	3.4912	0.062
		2	0.022	0.022	8.5320	0.014
		3	-0.018	-0.017	11.784	0.008
		4	0.045	0.044	32.696	0.000
		5	0.005	0.007	32.910	0.000
		6	0.005	0.003	33.197	0.000
		7	0.018	0.019	36.532	0.000
		8	-0.032	-0.033	46.941	0.000
		9	-0.005	-0.007	47.152	0.000
		10	-0.009	-0.008	48.008	0.000
		11	-0.005	-0.008	48.242	0.000
		12	-0.013	-0.010	49.960	0.000

Based on the results of the model 1 presented in table (5), we can notice that the returns in the following months exhibit significant positive above-average returns during the year: January, April, May, August and November compared to other months. November and January might be strongly attributed to the monthly effect anomaly in ASE.

These findings are also confirmed by the joint hypothesis for coefficient of individual months in ASE. The F-statistic value is 6.823 (with p-value =0) compared to F-critical value with 11 and 10285 degrees of freedom. This clearly rejects the hypothesis that the ASE is weak form efficient.

As already indicated, these findings do not tell whether a monthly effect has witnessed considerable change over time in ASE. Thus, the next section will address this remarkably essential point.

To obtain more precise estimates concerning the monthly pattern of stock returns and to analyze the change of this pattern over time, individual data on stocks are used. Similar to the regression equation (1) utilized earlier for analyzing the securities return, we utilize a regression equation that capture all individual effects in returns (intercepts might vary across stocks). We also allow for the non-linear monthly time pattern by a Taylor expansion. The first step is specifying the variable month denoted *m* that takes values between one and twelve. Then, the squared or cubic variable labeled m^2 and m^3, respectively, are calculated. The set of dummy variables in equation (1) is replaced by sufficient number of powers of the variable month. Note that the index i stands for individual stocks.

$$r_{it} = \alpha_i + \sum_{j=1}^{11} \beta_j m^j + \varepsilon_{it} \qquad (3)$$

The Ramsey RESET test is used to illustrate the effects of omitted and irrelevant variables and it is useful for detecting collinearity (in addition, tests discriminate among various models). Ramsey RESET stability tests indicate the appropriate power of the month that is needed to capture all non-linearities in ASE is three. Based on the p-value for F-static and Log likelihood ratio, the Ramsey RESET test do not reject the null hypothesis of no specification error at a 5% level of significance when the power three of the month is utilized.

Table (5) presents the results obtained by running regression equation (1) for individual stocks (model 1) and by estimating the approximation expressed in model (2). The approximation has two major advantages compared to working with a set of dummy variables (see Gao and Kling 2005 for details): first, the degrees of freedom are higher, as fewer coefficients have to be estimated. This is relevant to estimate the shift of the monthly time pattern over the eleven years, which is a major aim. Second, the approximation is less dependent on extreme observations that might affect a single coefficient of a dummy variable more severely; third, specifying a reference month is not required if one relies on the approximation. Hence, one obtains a stylized picture about the monthly time pattern.

Inspecting table 5 shows that both approaches come to similar results (model 1 and model 3). The results confirm our previous findings that the returns in the following months exhibit significant positive above-average returns: January, April, May, August and November compared to the returns in other months.

November and January can be strongly attributed to the monthly effect in ASE. Thus, we can confirm a positive year-end effect for ASE based on the results of both approaches. In light of the advantages inherent with the approximation, we thereafter concentrate on model (2) to uncover the changes in the monthly time pattern (in line with Gao and Kling 2005).

The interesting part of our empirical finding, as indicated above, is not this static estimation of the monthly effect but the estimates of the shift regarding the monthly time pattern. To quantify the changes of the monthly pattern over time, model (2) is extended by interaction term that permits a shift in intercepts and in slope coefficient. Consequently, the approximated monthly time pattern can change its shape over the period 2002 to 2006.

With this concern in mind, we re-specify our approximation model (model 2) by allowing interaction term that permits a shift in intercept and in slope coefficients. We find that the monthly time patterns do not change significantly over time (model 3 in table 5). Hence, we can say that market participants do not learn from their past experience to benefit from the months that exhibit relatively higher levels of returns. Thus, the time pattern does not fade away over the study period. Based on these findings, we can state that the ASE is outlying from the efficient market hypothesis.

Table 5: Models Estimated with OLS and AR(1) for Amman Stock Exchange to estimate monthly effects

	Model 1	**The Autoregressive Model**	**Model 2**	**Model 3**
Variable	**Coefficients**	**Coefficients**	**Coefficients**	**Coefficients**
Constant	-0.0131 (0.321)	-0.0124 (0.443)	-0.0249 (0.146)	-0.0249 (0.121)
January	0.0181 (0.000)	0.0178 (0.000)	0.0287 (0.006)	0.0288 (0.006)
February	0.0120 (0.459)	0.0122 (0.447)	0.0027 (0.182)	0.0016 (0.363)
March	0.0029 (0.248)	0.0001 (0.465)	0.0005 (0.171)	0.0005 (0.171)
April	0.0075 (0.008)	0.0064 (0.027)	0.0002 (0.068)	0.0003 (0.068)
May	0.0082 (0.002)	0.0077 (0.005)	0.0001 (0.056)	0.0002 (0.057)
June	Used as a reference month	Used as a reference month	0.0001 (0.032)	0.0001 (0.032)
July	0.0018 (0.485)	0.0007 (0.785)	0.0000 (0.267)	0.0000 (0.209)
August	0.0068 (0.015)	0.0059 (0.039)	0.0000 (0.078)	0.0000 (0.079)
September	0.0044 (0.116)	0.0032 (0.255)	0.0000 (0.127)	0.0000 (0.129)
October	0.0011 (0.627)	0.0003 (0.885)	0.0000 (0.220)	0.0000 (0.233)
November	0.0103 (0.000)	0.0091 (0.000)	0.0001 (0.030)	0.0000 (0.035)
December	0.0012 (0.649)	0.0008 (0.768)	0.0000 (0.273)	0.0000 (0.264)
AR(1)		0.0187 (0.506)		
Observations	13,599	13,599	10,297	10297
R^2	0.006	0.005	0.026	0.011

The above are the OLS regression coefficients with reported robust p-values applying White (1980) estimator. This makes the inference robust against heteroskedasticity.

Critique of Monthly Effect in Amman Stock Market

The efficient market hypothesis asserts that there is no short-term time-based pattern in stock returns and investors cannot realize consistently above-average return by utilizing past information. The monthly effect is mostly perplexing as it persists despite the efforts made by traders to take advantage of this phenomenon.

We found a wide room for the existence of monthly effect in ASE. Moreover, this phenomenon persists over time. November and January months, in particular, exhibit relatively higher levels of returns compared to other months.

In line with the findings in the capital markets literature on other emerging markets, various factors might simultaneously widen this phenomenon in ASE. The first is related to tax-loss selling strategies that aim to realize losses in the year end to reduce the taxable speculations gains. The other factor might be related to speculative behavior and institutional trading where losers sell their portfolio at the end of the year and repurchase such portfolios at the beginning of the next year. These results should encourage speculators in ASE to benefit from such phenomenon. Also, the factors presented by Rawashdeh and Squalli (2006) addressed earlier might largely explain our findings.

CONCLUSION

This study utilizes daily stock returns of the securities traded in ASE to determine whether the monthly effect subsists in this exchange over time. Our study sample consists of 230 stocks comprising all securities traded in ASE over the period from January 2002 to November 2006.

Our empirical results offer strong evidence that supports the existence, and more importantly, the subsistence of monthly effect in ASE over the period from 2002 to 2006. These results is somehow similar to the earlier findings of studies conducted on this exchange and similar to the findings obtained from other stock markets in other emerging markets that examined this phenomenon. In addition, the data on individual stock returns revealed that the time pattern does not experience considerable change over time. In line with Haugen and Jorion (1996), our findings suggest that market participants seemed to be not able to learn from past experience trading strategies to exploit the calendar anomalies. These findings clearly go against the Weak-Form level of market efficiency in the Jordanian capital market.

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اختبار ظاهرة أثر الاتجار الشهري في بورصة عمان خلال الفترة 2002-2006

إدريس الجراح*، بشير خميس** وفايز حداد*

ملخـص

استخدمت هذه الدراسة نماذج انحدار متقدمة لاختبار أثر ظاهرة الاتجار الشهري "Monthly Trading Effect" في عوائد الأسهم المدرجة في بورصة عمان خلال الفترة من 2002 إلى 2006. وقد أظهرت نتائج الاختبارات على عينة شملت 231 سهماً مدرجاً في بورصة عمان وجود تأثير جوهري لظاهرة الاتجار الشهري في مستويات عوائد الأسهم المدرجة في البورصة خلال فترة الدراسة. إضافة إلى ذلك، بينت النتائج استمرار هذه الظاهرة مع مرور الوقت بالرغم من حصول بعض التغيرات البسيطة على هذه الظاهرة خلال فترة الدراسة. تمشيا مع دراسة "Haugen and Jorion" عام 1996، تشير هذه النتائج إلى أن المتعاملين في بورصة عمان لا يستفيدون من سياسات الاتجار المستندة إلى المعلومات التاريخية التي تمكنهم من استغلال ظاهرة الأثر الشهري عند اتخاذهم قراراتهم الاستثمارية. هذه النتائج تتشابه مع ما توصلت إليه الدراسات السابقة التي تناولت بورصة عمان وأسواق رأس المال الناشئة. وبالتالي فإن نتائج هذه الدراسة لا تتفق مع الشكل الضعيف لفرضية السوق الكفوء.

الكلمات الدالة: الاتجار الشهري، بورصة عمان.

[*] Department of Finance, Faculty of Business, University of Jordan.
[**] Department of Accounting, Faculty of Business, University of Jordan.

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