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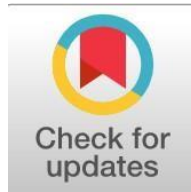
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Official Holidays and Their Impact on Exchange Rate Changes In The Parallel Market And The Movement Of The ISX Index: An Event Study

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Abstract

General Background Financial market anomalies across global exchanges frequently distort asset pricing and investor behavior during holiday periods. **Specific Background** In emerging economies like Iraq, understanding whether public holidays trigger abnormal returns in stock indices and parallel foreign exchange rates is vital for evaluating market efficiency. **Knowledge Gap** Existing literature rarely examines stock market indices and foreign exchange movements simultaneously within a unified empirical framework under managed auction mechanisms. **Aims** This study analyzes the impact of seventy-five official holidays on the Iraq Stock Exchange index and the Iraqi dinar parallel exchange rate from 2017 to 2022. **Results** Event study analysis using parametric t-tests reveals no statistically significant cumulative abnormal returns for either asset class around scheduled holidays, despite temporary initial reopening illiquidity in stock trading. **Novelty** The empirical findings demonstrate that the Iraqi market lacks a traditional holiday anomaly due to efficient information absorption and proactive central bank currency auctions. **Implications** Portfolio managers should avoid short-term seasonal timing strategies, focusing instead on fundamental firm evaluation.

Keywords Holiday Effect, Exchange Rate, Iraq Stock Exchange, Event Study, Market Efficiency

Key Findings Highlights

Official holidays produce no statistically significant cumulative abnormal returns in the Iraqi stock index or parallel exchange rate.

The Iraq Stock Exchange displays a brief reopening illiquidity drop followed by a positive trading rebound on the third post-holiday day.

Proactive central bank currency auction sales effectively neutralize seasonal foreign exchange volatility during bank closures.

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Introduction

The study of exchange rate fluctuations and the index of the *ISX* is an important issue that concerns investors, financial researchers and financial decision makers. In current financial theory and the efficient market hypothesis, prices of assets are expected to incorporate all market information. but, there are some empirical studies and research conducted in different global markets which have established the pattern called "calendar anomalies" such as holiday effect. This is what is referred to as abnormal returns in the markets on the days immediately before or after an official holiday, both because of psychological factors and changes in the level of liquidity. This subject becomes significant more when it is taken into consideration in an emerging Economy such as the Iraqi economy where the exchange rates are directly controlled and managed by Central Bank of Iraq through its currency auction window. Additionally, the Iraq Stock Exchange is still in its developmental and growth stage. The problem for the study is the effect of the information shock or liquidity shock caused by some official holidays in Iraq, whether religious, national or exceptional, on the fluctuations in exchange rate of Iraqi dinar in the parallel market and fluctuations in the movements of the (*ISX60*) index. This research also adds to the gap in the Iraqi academic literature that was able to be tested using a standard methodology of event study to determine the responses of these variables to official holidays within the research period. The following is a test of the efficiency of the Iraqi financial market in relation to the information of the scheduled official holidays, the base of the Study is that the efficiency of the financial market in Iraq is subjected to tests to verify the hypothesis. Also, this study merges two important aspects of the financial field, exchange rate and *ISX60* index, in a single event study, which enhances the understanding about the relationship between monetary and financial fields in Iraq. Additionally, the significance of this research involves the identification of the liquidity behaviour changes that come at holiday closure days, and giving feedback regarding the effectiveness of any proactive policy implemented by the government to preserve stability of the dinar exchange rate in times of change in consumer behaviour during specific periods of the year like official holidays. Finally, the study will provide recommendations for portfolio managers and investors to make important decisions in the process of developing short-term trading strategies that consider various holidays.

This research comprises four parts. The research methodology and the analytical method utilized are presented in the first section. The second part provides a theoretical overview of the literature dealing with the efficient market theory and the valuation anomalies, and addresses previous research on the research variables. The third part is a presentation of the applied and statistical parts of the research. The research findings are presented in the fourth section and recommendations and suggestions for further research are presented in the last section.

II. Research Methodology

The research population was included all the trading days of the Iraq Stock Exchange (*ISX*) and the Iraqi dinar exchange rate in the parallel market and official holidays in Iraq. The data analyzed is daily data for *ISX60* stock index, and the Iraqi dinar exchange rate in the parallel market from 1 January, 2017, to 31 December, 2022, and the Study sample took these data. Seventy-five official holidays (religious, national, and exceptional) were identified as the events under study, after excluding holidays for which sufficient data was not available for the estimation period. The independent variable was the official holidays (scheduled and unscheduled). The dependent variables were the daily returns of the *ISX60* index and the daily returns of the exchange rate in the parallel market.

The actual daily return (*R_{it}*) was calculated using the percentage change, represented by logarithmic equation (1):

$$R_{it} = \frac{(P_{it} - P_{i(t-1)})}{P_{i(t-1)}} \times 100 \dots\dots\dots (1)$$

Whereas:

P_{it} :Closing price for the day t

P_{i(t-1)} :Closing price of the previous day.

B. Methodology for studying the event:

To test the holiday's impact on the dependent variables, the research adopted the standard event study methodology, designed according to the following steps:

- a) Defining the event and event window: The event day is the official holiday and is denoted as (t=0). The event window was defined as (5) actual trading days immediately following the holiday [+1, +5] to measure the immediate market response after reopening.
- b) Estimation period: To estimate the normal market performance (in the absence of the holiday), an estimation period of (100) trading days was used. To avoid any preemptive effects of the holiday on the estimation period, a "gap" of (10) trading days was left before the holiday. Thus, the estimation period is [-110, -11] days before the event.
- c) Expected Return Model

To calculate the expected return *E(R_{it})*, the Constant Mean Return Model was used, which assumes that it is the normal return that would have been achieved without the holiday, and is calculated as a simple arithmetic mean of the returns during the estimation period as shown in equation (2) :

$$E(R_{it}) = \frac{1}{100} \sum_{t=-110}^{-11} R_{it} \dots\dots\dots (2)$$

- d) Calculating Abnormal Returns (*AR*)

The abnormal return was calculated for each of the five event window days, representing the difference between the actual and the expected return, as shown in Equation (3):

$$AR_{it} = R_{it} - E(R_{it}) \dots\dots\dots (3)$$

Whereas:

AR_{it} : The abnormal return of the variable i on day t represents.

- e) Calculating Cumulative Abnormal Returns (*CAR*)

To determine the overall impact of the holiday over the entire event window, the daily abnormal returns were aggregated as shown in Equation (4):

$$CAR_i = \sum_{t=1}^5 AR_{it} \dots\dots\dots (4)$$

- f) Calculating the Average Cumulative Return (*CAAR*):

To arrive at a general conclusion about the impact of all holidays (75 holidays) as a single sample, the arithmetic mean of the cumulative

abnormal returns was calculated according to equation (5):

$$CAAR = \frac{1}{N} \sum_{i=1}^n CAR_i \dots\dots\dots(5)$$

Whereas: N : Total number of holidays (75) holidays

C. Statistical methods and tools used in the research:

To ensure the reliability of the results and to test the study's hypotheses, the following methods were used:

- a) **Descriptive Statistics:** The arithmetic mean, standard deviation, skewness, and kurtosis were calculated to describe the probability distribution of returns.
- b) **One-Sample T-test:** to test the statistical significance of abnormal returns (AR) and cumulative returns (CAR). This measure tests the null hypothesis that the average of abnormal returns equals zero, i.e., $H_0:AR=0$ and $H_0:CAR=0$ at a significance level of 5%.

D. Research limitations:

The actual research sample subjected to statistical analysis was limited to the period from June 25, 2017, to October 9, 2022. Holidays falling outside this period were excluded due to the mathematical requirements of the event study methodology. This methodology requires a prior estimation period of 110 trading days before the event and a subsequent event window of 5 trading days. Accordingly, early holidays in 2017 were excluded due to insufficient prior historical data, and later holidays in 2022 were excluded due to insufficient subsequent trading data. To apply the event analysis, we need 110 actual trading days before the holiday (100 days for the estimation period + 10 days for the time gap) to calculate the expected normal return. While the selected sample starts on the first trading day of January 2, 2017, the holidays that fell at the beginning of 2017 (New Year's Day on January 1, Army Day on January 6, Nowruz on March 21, the death of Imam al-Kadhim on April 23, and Labor Day on May 1) were statistically excluded because there were no preceding 110 trading days in the data file to calculate the estimation period. The first holiday in the selected sample that met the requirement of having 110 trading days prior to the start of the data was Eid al-Fitr on June 25, 2017; therefore, it was the actual starting point for the analysis. The same reason applies to why the analysis ends on October 9, 2022, and not December 31, 2022: the requirements for applying the event methodology require 5 actual trading days after the holiday (the event window) to calculate the cumulative abnormal returns (CAR) were calculated, and the Prophet's Birthday holiday on 9/10/2022 was the last holiday included in the research sample for 2022 and it had the conditions for estimation (before it) and the conditions for the event window (after it). Any holiday that came after this date at the end of 2022 (such as Christmas holidays at the end of December) was excluded because there were no 5 actual trading days after it in the sample before the year closed.

E. Research hypotheses:

we can formulate the following hypotheses:

a) First main hypothesis:

(H01): There is no statistically significant effect of public holidays on the abnormal returns of the Iraq Stock Exchange Index (ISX60).

(H11): There is a statistically significant effect of official holidays on the abnormal returns of the Iraq Stock Exchange Index (ISX60).

b) Second main hypothesis:

(H02): There is no statistically significant effect of public holidays on the abnormal returns of the XR in the Iraqi market.

(H12): There is a statistically significant effect of public holidays on the abnormal returns of the XR in the Iraqi market.

III. Literature Review

Financial literature provides ample evidence of the positive impact of holidays on emerging and developed stock markets, particularly in the context of public holidays. This may be attributed to the positive sentiment associated with holidays. A study by [4] examined the effects of holidays on the TAIEX (Tunisian Air Transport Index) during the period 2001–2013. The empirical results showed that the TAIEX benefits were positive during and before the Chinese Lunar New Year, before and during the Qingming Festival and before and during Christmas. The study categorized holidays as either global or local. Air freight, container shipping, and road freight stocks experienced significant positive changes after global holidays, while container stocks saw substantial positive changes after local holidays. The study further revealed the impact of holiday duration: short-term holidays did not produce significant changes, but long-term holidays resulted in substantial positive changes in yield spreads. There appears to be very strong evidence and indicators suggesting that stocks experience abnormal returns due to the methodology associated with the day of the week, the week of the month, the month of the year, the monthly cycle, holidays, etc. [13].

[6] presented a paper that discussed the impact of holidays on the daily returns of Australian stocks at the market, industry, and small-cap stock levels during the period from Monday, September 9, 1996, to Friday, November 10, 2006. A paper by [1] discussed the pre holiday and post the Chinese New Year effects on the Hong Kong stock market from January 1988 to July 2012. The results obtained indicate significant effects for the two days before and one day after the Chinese New Year holiday. The results also showed that the period after the Chinese New Year holiday was more volatile than the period before the holiday. In addition, found evidence of asymmetric market reactions to negative and positive news. Significant positive or negative stock price movements occurring before holidays public are immediately followed by substantial price movements after those holidays. These movements can become even more pronounced if they occur over longer periods, unlike price movements on non-holiday days, which are often minor and insignificant. This effect is particularly pronounced in small-cap stocks with high volatility due to other company-specific factors. This is because investors tend to avoid making significant trading decisions before holidays [5].

[10] conducted a study on the impact of holidays on abnormal stock returns. Stocks achieved abnormally higher average returns on trading days preceding holidays compared to other trading days in the (GCC) countries. A study by [2], which discussed the holiday's impact on the hotel industry, found that The effects on daily hotel revenues resulting from holidays vary considerably. Furthermore, some holidays have effects depends on the day of the week they fall on. [8] conducted a study on the impact of restricted trading days (days with shorter trading hours) and non-trading days (days with normal trading) on stock returns on the Australian Exchange (ASX). The researchers used three daily return measures: All Ordinaries (the market) for the period 1958–2007, and Small Ordinaries (company with a small market capitalization) for the period 1994–2007. The ASX 100 (large-cap companies) for the period 1992–2007. The research included seven holidays. The results indicate anomalous returns on three days when trading and business activity is restricted. The Chinese New Year (Spring Festival) is the most significant national holiday in China and was studied by [15] in terms of the effects of the holiday on average daily returns. The researcher examined the three event windows (week before the Lunar New Year, the holiday week and the week after the Lunar New Year) that involve Chinese stocks trading in the U.S. stock market (1993 – 2011). The study revealed that the Lunar New Year holiday had a positive impact, as the Chinese daily deposit rates had significantly higher returns in the week leading up to Lunar New Year, but had lower returns during the week after Lunar New Year than outside of this period of the year. The other study by [14] was dedicated to examining how the performance and volatility of four major stock exchanges in Europe (Borsa de Madrid, Euronext Paris, Borsa Frankfurt and Borsa Italia) change during and on weekends. The researchers found that the daily closing data of the aforementioned stock markets led them to conclude that Spain and Germany were the most efficient markets, whereas daily returns in Italy were the most affected by the holiday effect because of the presence of companies in the small-cap segment and the possible presence of above and below average daily returns. This implies that the Italian market was the least efficient in terms of the four countries studied.

When we look at the results presented by [10] it seems that holidays exert a stronger effect on the returns of smaller stocks. Their study provided substantial evidence of the influence of holidays on trading behavior in the Portuguese stock market on both regular trading days and stock market holidays. The results also demonstrated the significant impact of sentiment on trading behavior, with positive investor feelings translating into buying pressure or selling reluctance, thus driving prices upward at the start of holidays.

In contrast to studies that have discussed the stock market's response to holidays, research on exchange rate responses to these events is limited. A study by [12]. Examined the impact of weekend holidays on the foreign exchange market for the currencies of six major Latin American countries which are pegged to the US dollar. The results showed unusual effects on the currencies of some countries and on certain days of the week, particularly Friday and Monday, and that exchange rate volatility exhibited a consolidational behavior in addition to the effects of leverage. [3] presented a paper that studied the impact of the frequency of public news related to currencies on seasonal changes in the daily exchange rate of the German dinar/US dollar. They found a significant correlation between exchange rate volatility and news frequency, and concluded that spot rates are volatile during of high economic news volume. The literature searched shows that previous studies and research are conducted separately with regards to stock markets and currency markets, mostly in a stable or advanced economy. This is an indication of the need for research on this topic which the present study tries to fill by investigating the effect on both the variables (stock markets and parallel market exchange rates) for the same event (official holidays). This study is carried out in a very special economic environment in Iraq where the dominance of the stock market is due to institutional investment and the currency auctions held by the central bank. The proposed sample covers a period encompassing numerous holidays (75) from June 25, 2017, to October 9, 2022. The holidays included: (New Year's Day, Iraqi Army Day, the death of Imam Al-Kadhim, International Workers' Day, Eid al-Fitr, the 14 of July Revolution, Eid al-Adhaa, the Islamic New Year, Ashura, the Arbaeen of Imam Hussein, the Prophet's Birthday, the anniversary of the victory over ISIS), including an exceptional holiday represented by the Corona pandemic, which allows for more reliable and accurate results regarding the efficiency of the Iraqi market.

V. Part Three: The Applied part of the Research

A. Results of the event study

Table (1) in Appendix (1) shows the calculation of abnormal returns for the ISX60 for each five days of the event window. Table (2) shows the calculation of abnormal returns for the Iraqi dinar exchange rate in the parallel market for each of the five days of the event window. The abnormal returns were calculated through the difference between actual and expected returns, and then the cumulative abnormal returns were calculated for both the exchange rates and ISX60 for each of the (75) holidays during the research period.

B. Presentation and discussion the results of the Average Daily Abnormal Returns (AAR) & Cumulative Abnormal Returns (CAAR)

The Average Daily Abnormal Return (AAR) was calculated for each of the five days following the holiday, i.e., from (AAR1) to (AAR5), as well as the Average Cumulative Abnormal Return (CAAR) was calculated for all 75 holidays during the period (2017-2022), for both the Iraq Stock Exchange Index ISX60 and the exchange rate, as shown in Table (3):

Table 3. Calculation of the CAAR for both the ISX60 index, the exchange rate, and the average returns

measures	Index ISX60 %	Exchange rate %
Average cumulative return (CAAR)	-0.404	0.13
1 (AAR 1)Average return	-0.245	-0.03
2 (AAR 2) Average return	-0.179	0.03
3 (AAR 3)Average return	0.09	0.02
4 (AAR 4)Average return	-0.074	0.06
5 (AAR 5)Average return	0.01	0.05

Table (3) shows that the Iraq Stock Exchange (ISX60) index recorded an abnormally negative return on the first and second days of reopening after the holiday. The average return on the first day was around (-0.24%) and the second day was around (-0.18%). The opening loss is blamed on the slow trading and liquidity restrictions during the initial trading/liquidity sessions. On the third day however, there was a significant positive recovery, with the return seeing a positive mark of (+0.09%), with investors providing liquidity and activity once more to offset the gap in activity that had occurred throughout the previous day. On the fourth and fifth day, the return started to level off again, and cross the threshold of zero, which meant the holiday price effect was quickly fading. Unlike the stock market, the exchange rate returns in the parallel market were very stable and fluctuated between (-0.03%) on the first day and (+0.05%) on the fifth day. This minimal change, virtually nothing, is due to the lack of any dramatic daily impact on the foreign exchange market due to the official holidays. As can be seen in Table (3), the Average Cumulative Return (CAAR) of ISX60 stock index over the event window (5 days) was around -0.40%, reflecting a slight cumulative downfall of the stock index after the holidays. The Average Cumulative Return (CAAR) of the exchange rate, also, showed a very small positive return, closely approaching zero (+0.13%) to confirm the stability of the buying power of the Iraqi dinar around the holiday periods. Based on this, it is concluded that the Iraqi stock market and the foreign exchange market have a high capacity to absorb the effect of public holidays that are scheduled without causing significant price fluctuations. The table shows the observed changes or increases are just random fluctuations within the typical range of the market and are not the result of a direct causal effect of the holiday itself.

The (ARR) in 5-day holiday window window is presented in Figure (1). This chart shows one interesting behavior of the market and exchange rate when it comes to how they respond day after day after a holiday. The dark solid line represents the Iraq Stock Exchange (ISX60) index's path. A sharp and abnormally low return is observed on the first and second days (which is around -0.24% on the first day). This is referred to as the reopening shock, which is the downturn in activity and liquidity that occurs right after a holiday, when the market is very slow. A strong and sudden positive rebound however does follow on day 3 (around +0.08%). The "rebound effect" in finance refers to the return of investors to buy back due to lack of activity in previous periods and infusing liquidity. The curve starts to level off on the fourth and fifth days and slowly approaches the zero line (normal return) as the impact of the holidays is fully absorbed by the market by the fifth day. Finally, the path of the exchange rate (the gray dashed line) is much more pronounced, with fairly minimal fluctuations ranging from -0.03% to +0.05%. Again, this demonstrates the efficacy of monetary policy of the central bank as the movements are virtually linear and barely significant on a day-to-day basis; holidays do not create any meaningful day-to-day instability of the exchange rate. It is to be noted that the AR (Abnormal Return) is the effect that may be seen on a particular day (e.g. only on the third day after the holiday). This is a helpful gauge of the market's reaction, but isn't a full indicator of how much of a shock it is to the market. Figure (1) illustrates this:

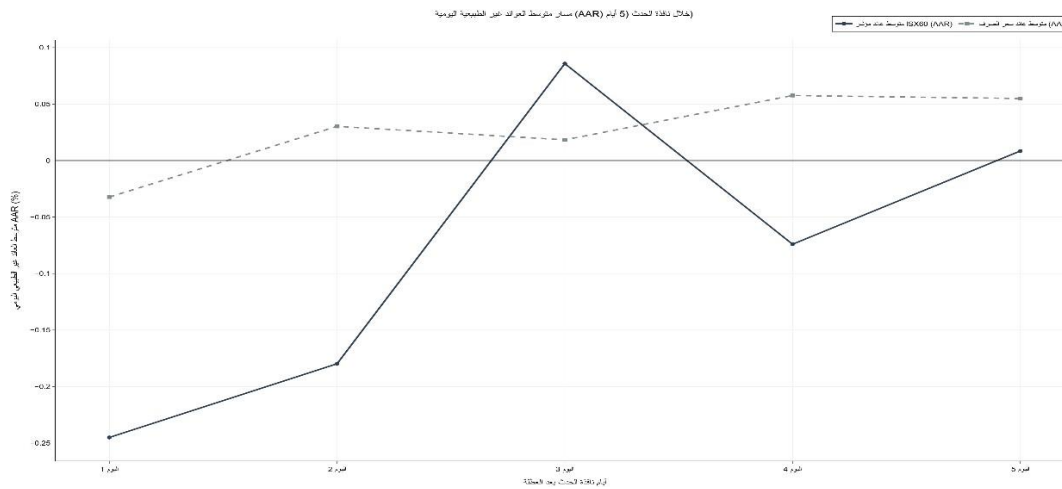


Fig. 1. Average Daily Abnormal Returns (ARR) during the event window (5 days) following the holiday

The average cumulative abnormal returns (CAR) of each type of holiday is illustrated in Fig. (2) during the research period. There is a variation in the market's response. The Iraq Stock Exchange (ISX60) index has a large negative CAR, which implies an unusual event like COVID-19 pandemic lockdowns. This logically reflects a state of panic and uncertainty. The holidays like Iraqi Army Day and Nowruz have a significant negative effect as well. This may be due to profit-taking or lack of liquidity, since investors would prefer to sell their investments before long holidays. The positive cumulative abnormal returns are observed in some religious and national holidays, including Ashura (the day of the death of Imam al-Kadhim) and the day of the victory over ISIS. This could be a result of optimism or stability for investors following these events. With respect to the exchange rate, it is noted that exchange rate fluctuations (grey bars) tend to be less around holidays than they are with the stock market index. The most significant exception was on the "Victory over ISIS" anniversary, when the CAR had a positive impact on the exchange rate, significantly. The average CAR for each type of holiday for the research period is depicted in figure (2). Similar holidays were combined (such as holidays of Eid al-Fitr from all years and taking the average of those holidays). Note that the CAR (Cumulative Abnormal Return) captures the cumulative overall effect of the holiday as one event within the five day event window. The emphasis is typically on what impact the holiday has on the market as a whole and the CAR is the sole indicator that does reflect this impact since it is the sum of the impact of all the days.

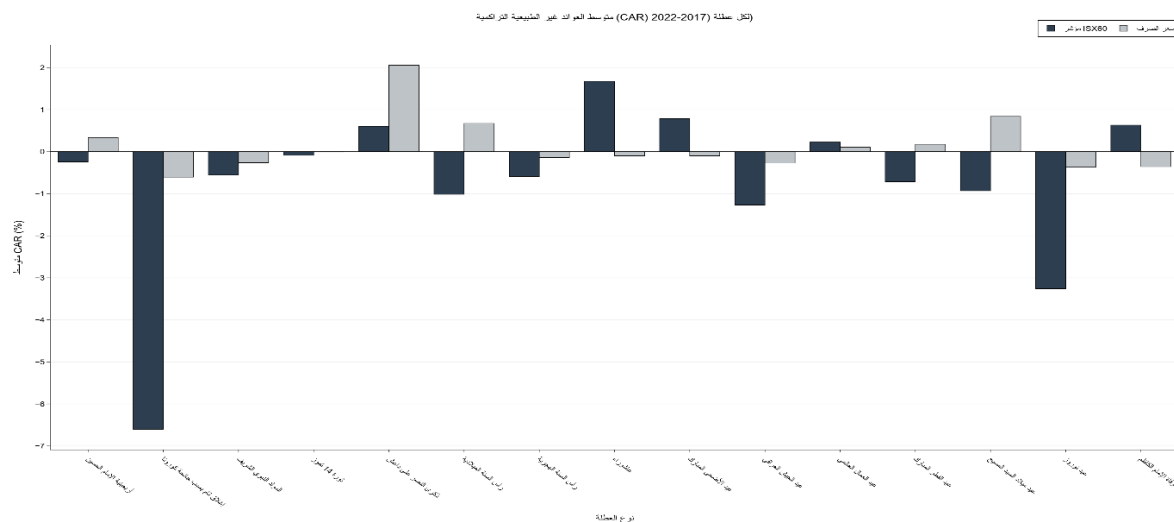


Fig. 2. Average (CAR) for each type of fault during the research period

C. Statistical test (One-Sample T-test)

The t-test determine whether the mean (AR) and (CAR) were significant statistically at the 5% level. If the p-value was less than 0.05, the result was statistically significant, and vice versa. Table (4) shows results of the test:

Table 4. Results of the statistical test (One-Sample T-test)

Variable	(Mean)	(T-Stat)	(P-Value)	(Stars)	Significant at 5%
CAR ISX60 (%)	-0.40	-1.56	0.12		(Non-moral)
CAR Exchange Rate (%)	0.13	0.94	0.35		(Non-moral)
AR ISX60 Day 1 (%)	-0.25	-2.12	0.04	**	(moral)
AR FX Day 1 (%)	-0.03	-0.70	0.49		(Non-moral)
AR ISX60 Day 2 (%)	-0.18	-2.02	0.05	**	(moral)

AR FX Day 2 (%)	0.03	0.91	0.37		(Non-moral)
AR ISX60 Day 3 (%)	0.09	0.93	0.35		(Non-moral)
AR FX Day 3 (%)	0.02	0.32	0.75		(Non-moral)
AR ISX60 Day 4 (%)	-0.07	-0.53	0.60		(Non-moral)
AR FX Day 4 (%)	0.06	0.93	0.35		(Non-moral)
AR ISX60 Day 5 (%)	0.01	0.08	0.94		(Non-moral)
AR FX Day 5 (%)	0.05	1.26	0.21		(Non-moral)
** Significant at a level of 5%					

Table (4) shows that most of the abnormal returns (AR) and (CAR) of the ISX60 index and the exchange rate are not statistically significant. This statistically means that the holidays did not have a definite abnormal or strong impact on the Iraqi market during the research period, and that the changes that occurred may be a result of normal market fluctuations.

D. Descriptive statistics:

Table (5) shows the comprehensive descriptive statistics calculated for all variables (CAR) and (AR) for the five days for both the ISX60 index and the exchange rate.

Table 5. Descriptive statistics for AR and CAR

variable	Number of views	average	standard deviation	minimum	ceiling	(Skewness)	(Kurtosis)
CAR ISX60 (%)	75.00	-0.40	2.24	-6.60	8.43	0.13	3.65
CAR Exchange Rate (%)	75.00	0.13	1.19	-1.48	8.22	4.83	29.66
AR ISX60 Day 1 (%)	75.00	-0.25	1.00	-3.24	4.13	0.18	5.78
AR FX Day 1 (%)	75.00	-0.03	0.40	-1.16	1.41	0.36	4.96
AR ISX60 Day 2 (%)	75.00	-0.18	0.77	-2.27	2.44	0.22	2.21
AR FX Day 2 (%)	75.00	0.03	0.29	-0.56	2.07	4.97	34.12
AR ISX60 Day 3 (%)	75.00	0.09	0.80	-1.69	3.45	1.24	4.25
AR FX Day 3 (%)	75.00	0.02	0.50	-3.27	2.07	-2.57	29.76
AR ISX60 Day 4 (%)	75.00	-0.07	1.22	-2.38	7.01	2.98	15.86
AR FX Day 4 (%)	75.00	0.06	0.53	-1.62	3.06	3.06	17.69
AR ISX60 Day 5 (%)	75.00	0.01	0.96	-3.86	4.26	0.75	8.16
AR FX Day 5 (%)	75.00	0.05	0.38	-0.48	2.22	4.55	23.35

Table (5) presents the descriptive statistics, namely the arithmetic mean and median, to identify the central tendency of realized returns. It also shows the standard deviation to measure the dispersion or volatility of returns around their average, i.e., a measure of risk. Furthermore, it shows the upper and lower limits to determine the maximum rise and fall that occurred after the holiday. The table also indicates the skewness and squattness, which are crucial measures for determining whether the distribution of returns is normal, or whether there is a concentration of returns in a particular area or the presence of outliers. We observe that the standard deviation of the CAR for the ISX60 is significantly higher than the standard deviation of the CAR for the exchange rate. This confirms that the stock index is more volatile and riskier around holidays compared to the exchange rate, which appears more stable thanks to central bank interventions. Regarding the skewness noted that the values are not at zero as a perfect symmetrical distribution of returns is a very common phenomenon in emerging financial markets such as the Iraqi market. The results of One-Sample T-test showed that the p-values for the (AAR) and (CAAR) were greater than the 5% significance level. Therefore, we accept the first sub-hypothesis of first main hypothesis (Ho1), which states that “public holidays have no statistically significant effect on the abnormal returns of the Iraq Stock Exchange Index (ISX60).” We also accept the first sub-hypothesis of the second main hypothesis (Ho2), which states that “public holidays have no statistically significant effect on the abnormal returns of the exchange rate in the Iraqi market.” In other words, the changes that occurred around holidays are random and fall within the normal range of market fluctuations, and it cannot be definitively stated that the holiday itself is the definitive cause. Since the p-value of the t-test was greater than the significance level (0.05) for most days of the event window, we accept the first and second null hypotheses. We conclude that public holidays do not have a significant abnormal impact on either the stock market index or the exchange rate, reflecting certain characteristics of the efficiency of the Iraqi market and the Central Bank’s policies. We also conclude that the Iraqi stock market is not governed by investor sentiment related to holidays, but rather decisions are made based on fundamental rather than technical analysis. Furthermore, this indicates that the parallel market for the Iraqi dinar is not affected by the so-called calendar anomaly because it is managed and supervised by the Central Bank through its currency window. The Central Bank of Iraq sometimes intervenes to absorb fluctuations that may occur in foreign currency demand during holiday seasons, for example, and maintains stability. This reflects a certain degree of efficiency in this emerging market, and consequently, the impossibility of investors achieving abnormal returns based on public holidays

VI. Section Four: Conclusions and Recommendations

Conclusions:

Based on the results obtained when calculating the cumulative abnormal returns (CAR), the t-test, and the graph, we can conclude that the Iraq Stock Exchange does not suffer from the “holiday effect” phenomenon common in some global markets (where returns rise abnormally before or after holidays). This indicates that traders in the Iraqi market do not base their investment decisions on the holiday calendar. Furthermore, official holidays in Iraq (such as national holidays and celebrations) are scheduled and known in advance. As a result, it can be concluded that this information is consumed beforehand by the Iraqi market, thus avoiding abnormal price jumps or drops when trading begins. It was found that the descriptive statistics of the stock index were also high around the holidays, despite the mean abnormal return being near zero, suggesting that the risk (standard deviation) was also high during these periods. This implies that holidays can, in turn, lead to greater volatility in prices, as well as to temporary liquidity constraints, which may be associated with a rise in noise but not of any assured additional returns. In terms of exchange rate, statistical results have demonstrated considerable stability of the abnormal returns of the exchange rate around holidays. This implies that the exchange rate of Iraq is not affected by the seasonal shift in demand and supply as is the case with the demand and supply of travel during holidays. It also indicates that the Central Bank of Iraq’s currency auction window is very flexible and efficient in

forecasting and satisfying demand before long periods of holiday, and thus helps to prevent the effect of speculation and rumors which may occur during the period of bank closure. The graph shows that exceptional or sudden holidays (such as closures due to the COVID-19 pandemic) generated very sharp and negative cumulative anomalous returns (CAR). This indicates that the Iraqi market is highly sensitive to shocks or unscheduled holidays, while completely disregarding scheduled, routine holidays. Slight positive cumulative returns were also observed after events such as the anniversary of the victory over ISIS. It is concluded that certain holidays with a strong national character may create a sense of optimism among investors, which translates into stability or a slight improvement in trading activity upon market reopening. Measures of skewness and curvature have shown that the distribution of returns around the holiday does not follow a normal distribution. This suggests that the Iraqi market exhibits classic emerging market characteristics, with price changes occurring in spurts rather than smooth, gradual shifts.

Recommendations:

The researchers recommend that investors in the Iraq Stock Exchange avoid seasonal speculation strategies and refrain from relying on short-term trading strategies that target market timing and aim for exceptional profits based on official holidays. Research has proven these strategies statistically ineffective and incapable of generating additional returns beyond normal market returns. Instead, they advise focusing on long-term investment.

Investors are also advised to direct their efforts toward fundamental analysis of companies, evaluating financial performance, and building long-term investment portfolios, rather than attempting to time the market around holidays and special occasions. Furthermore, they caution against temporary liquidity shortages. Given the high standard deviation (volatility) around some holidays, despite the absence of guaranteed returns, investors are advised to avoid indiscriminately liquidating their portfolios immediately before holidays to prevent selling at unfair prices due to temporary liquidity constraints. The stability of the exchange rate around holiday periods reflects the success of the central bank's policy in meeting seasonal demand for foreign currency. Hence, the current study suggests that the central bank's proactive policy to cushion the effects of holiday periods on the exchange rate should be continued. This can be done by continuing to sell foreign currency proactively from the currency sale window before holidays and extended breaks to ensure a smooth flow of such currency and the absence of active parallel (black) markets in the period of bank closures.

The central bank also is recommended to intensify financial literacy by issuing periodic reports to the public which would give them confidence about financial liquidity before the prolonged holidays. This will help to suppress speculation which could cause the exchange rate to fluctuate psychologically.

0. Future researches:

This study can be extended by analyzing the effect of the holiday on individual sectors (e.g. banking, telecommunication, manufacturing etc.), i.e. studying the sectoral impact besides just the overall index, since some sectors may have different response to the holiday than the overall index.

We also propose that future research be conducted with real-time trading data to see if the effect can be seen in the first couple of hours of the market opening after the holiday and then wanes by day's end.

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