

RESEARCH ARTICLE

Religious Events and Interpretation of Fluctuations in Stock Markets Evidence from Price Anomalies during the Arbaeen Occasion in the Iraq Stock Exchange

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ABSTRACT

Many studies and research have shown close relationships between seasonal phenomena that are related to religious beliefs and anomalies in returns and stock prices, which paved the way for exploring other anomaly days and wider time series that occur in the second month of the Hijri year, which is the month of Safar in the holy city of Karbala in Iraq, as it will represent an experimental addition to the financial scientific path and aid in providing evidence of those fluctuations and what they produce in influencing prices and returns in the stock market. The study, which conducted an analysis of stock prices in the banking sector and the hotel sector in the market for the period from 2013-2022, shows a low estimate of the price of one share compared to the volume of billion shares, as well as a gradual decline in share prices for the two sectors, the study sample, and the share prices in the month of Safar, which witnessed a remarkable fluctuation in the general average of the periods. The three are divided into ten days each period, at the beginning of the month, during the visit, and at the end of the month, with a slight decrease in the first and middle periods and then a rise again at the end of the month. This supports the general recession that affects various sectors, including the economic and financial ones, and constitutes an opportunity for the investment decision-maker to benefit from these price fluctuations.

Keywords: Behavioral finance; Price abnormalities; Stock market; Seasonal distortions; The effect of the Arbaeen Occasion

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1. Introduction

Behavioral finance sought to address some of the shortcomings of traditional finance explaining stock prices and predicting changes, as well as the biases that investors experience. Behavioral finance has demonstrated, through years of focused research, that investors have multiple motivations and tendencies, and that they exhibit behavior that is different from rational behavior when making decisions due to cognitive and emotional biases that influence their decision-making processes. Despite the increasing level of rigor in the traditional finance approach, it remains difficult to scientifically explain the irrational behavior of individuals in making various financial and investment decisions, as traditional finance models assume that investors are rational and that their decisions are based on efficient and objective processing of relevant information and aimed at maximizing benefits. In the Iraqi context, there are many fluctuations and events that last for months, and their consequences should be taken into account, including the religious events that take place during the months of Muharram and Safar and the Arabian visit in the holy city of Karbala, as well as the month of Ramadan. Karbala is a religious city that derives its spirituality from the historical event of the martyrdom of Imam Hussein (PBUH), the grandson of the Prophet Muhammad (PBUH), his family, and companions in that city at the hands of Yazid bin Muawiyah. The visitation event takes place every year on the twentieth of Safar. This study aims to provide real evidence from the Iraq Stock Exchange on the extent to which stock prices are affected by these events and to identify any lost investment opportunities resulting from price anomalies. Therefore, we will examine these events, which last for a significant period of one month, especially for investment decision-makers, and the fluctuations that occur during this period, which may not be explained by the efficient market theory and subsequent traditional financial theories that assume no impact of these events on prices and returns.

Tversky and Kahneman (1986) describe distor-

tions in capital markets as deviations from currently accepted models; they are too widespread to be ignored, too regular to be described as random error, and too fundamental to be accommodated by diluting the standard system^[1]. These changes, including distortions and phenomena such as irrationality and unexpectedness, created fertile ground for the development of the science of behavioral finance. It is an area in which the science of finance and cognitive psychology intersect, which leads to a greater knowledge of investors and an understanding of their investment and speculative decision models, which have a significant and continuous impact on the financial markets. The School of Behavioral Finance is trying to describe a group of phenomena that may affect the behavior of individuals in the financial market using psychology literature and terminology. What contributed to the growth of the branch of economics and behavioral finance is the inability of the traditional school with its hypothesis (maximizing the expected benefit) for rational investors within the framework of the efficiency of financial markets to explain many models of deviations (anomalies) in the prices of financial assets, as the prices of some stocks seem very far from their fair value or You find repeated models for the movement of stock prices, which suggests the possibility of predicting their future movement, and this is a major contradiction with what the market efficiency theory calls for. Therefore, the behavioral approach attempts to resolve these contradictions through explanations based on human behavior as individuals and groups^[2]. Social norms significantly influence an individual's general behavior^[3], investors' preferences (Kim and Venkatachalam 2011), and financial decisions (Baker and Nofsinger 2012), and thus their stock market trading behavior and outcomes (Fabozzi et al. 2008, Hong and Kacperczyk 2009, Baker and Nofsinger 2012).

There are various forms of calendar anomalies that have been explored in the financial literature. Among the factors most studied are the effect of the month of the year, the effect of the day of the week, the effect of the cycle of the month, the effect of the holiday, and the effect of the week of the year. An-

alysts study these effects to determine the best moment to buy and sell stocks in a particular market by observing which moment of the day, week, month, or year has the highest and lowest returns. These effects are particularly beneficial to market participants who base their strategy on speculating on price changes rather than investing for longer periods of time. They can buy or sell more frequently in the market and thus benefit from the expected evolution of returns^[4]. There is a vast body of literature on the impact of seasonality on stock market prices and returns in both developed and emerging economies. The effect of the day of the week on developed markets has been extensively studied by Osborne (1962), Cross (1973), Jaffe and Westfield (1985), Mbululu, and Chipeta (2012), among others. Typically, average returns are lower on Mondays than on other days of the week, while average returns on Fridays tend to be positive and abnormally high. Aggarwal and Rivoli (1989) examine seasonal and daily patterns in equity returns for four emerging markets, namely Hong Kong, Singapore, Malaysia, and the Philippines. They found that Monday returns were lower, indicating that weekends have an impact. They also found a substantial effect on Tuesday, which they attribute to the time difference between New York and the emerging markets. Finally, Anwar et al. (2021) found that several developing countries exhibit a negative Monday effect and a positive Thursday effect.

While there is a vast literature on calendar anomalies in equity markets, there has been comparatively less attention given to deviations in the Islamic calendar. It can be argued that religious practices during months of the Islamic calendar can impact economic activities in the Islamic world, leading to seasonal patterns in stock market returns. Several studies have explored deviations in the Islamic calendar in stock markets across the Islamic world^[5-13]. Several researchers have explored the impact of religious events on stock returns, Al-Hajjeh et al. (2011), Al-Ississ (2010), Al-Khazali (2014), and Biakowski et al. observed significant returns during the month of Ramadan^[14]. However, Seyyed et al. (2005) did not find any correlation between the month of Ram-

adan and stock returns in Saudi Arabia. In a study of 14 Islamic countries, And^[15] found no substantial evidence of calendar anomalies in stock market returns, except for a small abnormal negative return during the Islamic month of Rajab in Kuwait. He also noted a slight negative impact of Monday on stock markets in Bangladesh and Pakistan and a slight positive impact of January in Morocco^[15,16]. Using a structural time-series model, it was found that there is no significant evidence of Ramadan return seasonality for the 12 stock markets in the long term, suggesting that Ramadan returns seasonality disappears over time^[17].

2. The practical aspect

2.1 Banking sector

The fact that this section of the study is concerned with analyzing and interpreting data related to stock prices in the Iraqi stock exchange for the banking sector—the market's most active sector—represented by a sample of two banks, the Bank of Baghdad and the Khaleeji Commercial Bank, makes its importance clear. The study dealt with the month of Safar consisting of thirty days divided into three periods of time, the first period ten days before the Arba'een visit, the second period the period of the forty-first visit with ten days, and the third period the last ten days of the month of Safar until after the Arba'een visit, and for the period from 2013 to 2022, as shown in **Table 1**.

Through This long-term analysis of the movements of share prices in the banking sector reveals a general weakness in share pricing, with a focus on volume of listed shares over individual share price. The prices of shares in the banking sector ranged between (1.69) dinars per share in 2013 and (0.18) dinars per share in 2020. However, due to currency inflation, this value has been extinct for over thirty years and replaced by three zeros with relative purchasing power to the dinar. Despite this, we observe a sharp decline in stock prices from 2013 to 2022, with a loss of over 71% of their value. Banking is the most

significant sector in the Iraqi stock exchange in terms of number, size, and circulation. With regard to the fluctuations in stock prices over the month of Safar for ten years, we observe a consistent decline for the period from days 10 to 20 of the month, which coincides with the peak of the Arbaeen Occasion and witnesses a general slowdown in economic activity, particularly in financial markets. As a result, the general average of stock prices drops to (0.676) dinars during the middle ten days of the month. During the last ten days of the month there was a significant increase in the general rate, which can be attributed to the resumption of normal economic practices in the country and the preparation for the end of mourning and the start of Rabi` al-Awwal. The average share price for ten years reached (0.718) dinars. The share price at the beginning of Safar was

on average (0.7) dinars, higher than the share price during the peak (middle) days and lower than the last ten days. This can be attributed to the continuation of the decline in share prices from Muharram to Safar. Although the volume of price fluctuations is not significant, can still influence investment decisions, particularly in large deals. Those looking to buy shares for speculative purposes may find the middle ten days of Safar as an opportunity for investment preference to achieve price differences.

2.2 Hotel sector

The hotel sector includes ten hotels listed in the Iraq Stock Exchange, and it was chosen for the importance of this sector in religious occasions, especially the city of Karbala, the event of the sample, and although it is a hotel city and contains the largest

Table 1. Stock prices for the banking sector for the period 2013-2022.

Banks sector share price				
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual
2013	1	1.50	1.45	1.54
	2	1.61	1.56	1.65
	3	1.55	1.50	1.59
	4	1.58	1.53	1.62
	5	1.65	1.60	1.69
	6	1.53	1.48	1.57
	7	1.31	1.27	1.34
	8	1.29	1.24	1.32
	9	1.28	1.24	1.31
	10	1.39	1.35	1.43
Average		1.47	1.42	1.50
2014	1	1.54	1.49	1.58
	2	1.59	1.54	1.63
	3	1.58	1.53	1.62
	4	1.46	1.41	1.49
	5	1.49	1.44	1.53
	6	1.53	1.48	1.57
	7	1.39	1.34	1.43
	8	1.25	1.21	1.28
	9	1.21	1.18	1.24
	10	1.26	1.22	1.30
Average		1.43	1.38	1.47

Table 1 continued

Banks sector share price				
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual
2015	1	1.27	1.23	1.31
	2	1.14	1.10	1.17
	3	1.24	1.19	1.27
	4	1.21	1.17	1.24
	5	1.17	1.13	1.20
	6	1.01	0.98	1.03
	7	1.01	0.98	1.04
	8	0.96	0.93	0.98
	9	1.08	1.04	1.11
	10	1.08	1.04	1.11
Average		1.12	1.08	1.14
2016	1	0.91	0.88	0.94
	2	0.99	0.95	1.02
	3	0.96	0.92	0.99
	4	0.87	0.84	0.90
	5	0.72	0.70	0.74
	6	0.78	0.75	0.81
	7	0.72	0.69	0.74
	8	0.69	0.66	0.71
	9	0.60	0.58	0.62
	10	0.59	0.57	0.61
Average		0.78	0.75	0.80
2017	1	0.63	0.61	0.64
	2	0.66	0.64	0.68
	3	0.66	0.64	0.68
	4	0.62	0.60	0.63
	5	0.57	0.55	0.58
	6	0.61	0.59	0.62
	7	0.60	0.58	0.61
	8	0.63	0.60	0.65
	9	0.71	0.69	0.73
	10	0.70	0.68	0.72
Average		0.64	0.61	0.65
2018	1	0.65	0.62	0.67
	2	0.62	0.60	0.64
	3	0.53	0.51	0.54
	4	0.48	0.46	0.49
	5	0.44	0.42	0.45
	6	0.39	0.38	0.40
	7	0.41	0.39	0.42
	8	0.38	0.37	0.39
	9	0.40	0.39	0.41
	10	0.39	0.38	0.40
Average		0.47	0.45	0.48

Table 1 continued

Banks sector share price				
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual
2019	1	0.40	0.39	0.41
	2	0.44	0.42	0.45
	3	0.39	0.38	0.40
	4	0.36	0.34	0.37
	5	0.30	0.29	0.31
	6	0.29	0.28	0.30
	7	0.30	0.29	0.31
	8	0.28	0.27	0.29
	9	0.27	0.26	0.28
	10	0.23	0.22	0.23
Average		0.32	0.31	0.33
2020	1	0.22	0.21	0.22
	2	0.22	0.21	0.22
	3	0.21	0.21	0.22
	4	0.19	0.19	0.20
	5	0.19	0.18	0.19
	6	0.19	0.18	0.19
	7	0.27	0.26	0.28
	8	0.24	0.23	0.24
	9	0.21	0.21	0.22
	10	0.21	0.21	0.22
Average		0.21	0.21	0.22
2021	1	0.22	0.22	0.23
	2	0.24	0.23	0.25
	3	0.25	0.25	0.26
	4	0.27	0.26	0.27
	5	0.24	0.24	0.25
	6	0.24	0.24	0.25
	7	0.24	0.23	0.24
	8	0.22	0.21	0.22
	9	0.23	0.22	0.23
	10	0.25	0.24	0.26
Average		0.24	0.23	0.24

Table 1 continued

Banks sector share price					
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual	
2022	1	0.30	0.29	0.31	
	2	0.30	0.29	0.31	
	3	0.26	0.25	0.27	
	4	0.27	0.26	0.28	
	5	0.27	0.26	0.28	
	6	0.28	0.27	0.29	
	7	0.27	0.26	0.28	
	8	0.40	0.39	0.42	
	9	0.40	0.39	0.42	
	10	0.41	0.39	0.42	
Average		0.31	0.30	0.33	
General average		0.7	0.676	0.718	0.698

Source: The table was prepared by the researchers based on the outputs of the electronic calculator.

percentage of Iraq's hotels, this sector is still far from modern capitalization, listing and participation in the market Financial for many reasons, including those related to the financial market, and others due to primitive investment culture, lack of confidence and weakness in laws and other reasons that did not constitute an incentive to supply the market with thousands of operating and profitable hotels on the ground because they are active in tourist cities, and **Table 2** shows the prices of shares of this Sector for the period from 2013 to 2022.

The share prices of the hotel sector witnessed

relative preference in the pricing of the shares of the banking sector compared to the share pricing of the banking sector, as the average price of one share for the hard years during the month of zero reached 8.816 dinars per share, which is nearly ten times the share price of the banking sector. Priced much lower than the value that keeps pace with inflation and the general level of prices.

The prices of the hotel sector witnessed remarkable stability with slight differences throughout the study period. In 2016 and 2021, the share price decreased somewhat, reaching approximately seven

Table 2. Stock prices for the hotel sector for the period 2013-2022.

Hotels sector share price					
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual	
2013	1	8.40	8.32	8.48	
	2	8.50	8.42	8.58	
	3	8.50	8.42	8.58	
	4	8.70	8.61	8.78	
	5	9.25	9.16	9.33	
	6	9.40	9.31	9.48	
	7	9.30	9.21	9.38	
	8	9.50	9.41	9.59	
	9	9.50	9.41	9.59	
	10	9.50	9.41	9.59	
Average		9.14	9.06	8.96	

Table 2 continued

Hotels sector share price				
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual
2014	1	11.00	10.89	11.10
	2	11.50	11.39	11.60
	3	11.30	11.19	11.40
	4	11.10	10.99	11.20
	5	12.00	11.88	12.11
	6	11.40	11.29	11.50
	7	13.35	13.22	13.47
	8	10.80	10.26	10.90
	9	11.40	10.83	11.50
	10	10.75	10.21	11.23
Average		11.6	11.46	11.21
2015	1	10.95	10.40	11.44
	2	10.25	9.74	10.71
	3	10.85	10.31	11.34
	4	10.09	9.59	10.54
	5	10.20	9.69	10.66
	6	9.35	8.88	9.77
	7	9.00	8.55	9.41
	8	9.10	8.65	9.51
	9	8.00	7.60	8.36
	10	7.70	7.32	8.05
Average		9.98	9.55	9.07
2016	1	7.65	7.27	7.99
	2	7.25	6.89	7.31
	3	7.20	6.84	7.26
	4	6.95	6.60	7.01
	5	6.25	5.94	6.30
	6	7.60	7.22	7.66
	7	7.40	7.03	7.46
	8	7.65	7.27	7.71
	9	6.85	6.51	6.90
	10	9.10	8.65	9.17
Average		7.48	7.39	7.02
2017	1	9.00	8.55	9.07
	2	9.00	8.55	9.07
	3	9.00	8.55	9.07
	4	10.30	9.79	10.38
	5	10.00	9.50	10.36
	6	9.15	8.69	9.47
	7	9.25	8.79	9.58
	8	8.70	8.27	9.01
	9	8.40	7.98	8.70
	10	7.80	7.41	8.08
Average		9.28	9.06	8.61

Table 2 continued

Hotels sector share price				
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual
2018	1	9.00	8.55	9.32
	2	9.35	8.88	9.68
	3	8.10	7.70	8.39
	4	8.20	7.79	8.49
	5	8.30	7.89	8.59
	6	8.45	8.03	8.75
	7	8.11	7.70	8.40
	8	8.51	8.08	8.81
	9	8.50	8.08	8.80
	10	8.80	8.36	9.11
Average		8.83	8.53	8.11
2019	1	8.60	8.17	8.91
	2	8.35	7.93	8.65
	3	8.40	7.98	8.70
	4	8.40	7.98	8.70
	5	9.00	8.55	9.32
	6	8.55	8.12	8.85
	7	8.25	7.84	8.54
	8	8.05	7.65	8.34
	9	8.30	7.89	8.59
	10	8.10	7.70	8.39
Average		8.7	8.40	7.98
2020	1	8.30	7.89	8.59
	2	8.60	8.17	8.91
	3	8.90	8.46	9.22
	4	8.38	7.96	8.68
	5	8.18	7.77	8.47
	6	8.32	7.90	8.62
	7	8.32	7.90	8.62
	8	8.40	7.98	8.70
	9	8.20	7.79	8.49
	10	8.05	7.65	8.34
Average		8.66	8.37	7.95
2021	1	7.65	7.27	7.92
	2	7.60	7.22	7.87
	3	7.50	6.90	7.52
	4	7.65	7.04	7.67
	5	8.10	7.45	8.12
	6	7.60	6.99	7.62
	7	7.95	7.31	7.97
	8	8.00	7.36	8.02
	9	7.65	7.04	7.67
	10	8.50	7.82	8.52
Average		7.98	7.82	7.24

Table 2 continued

Hotels sector share price				
Year	Days	Returns trading days (10) before the Arbaeen ritual	Returns trading days (10) in the Arbaeen ritual	Returns trading days (10) after the Arbaeen ritual
2022	1	8.40	8.32	8.48
	2	8.50	8.42	8.58
	3	8.50	8.42	8.58
	4	8.70	8.61	8.78
	5	9.25	9.16	9.33
	6	9.40	9.31	9.48
	7	9.30	9.21	9.38
	8	9.50	9.41	9.59
	9	9.50	9.41	9.59
	10	9.50	9.41	9.59
Average		9.06	9.06	8.96
General average		8.886	8.545	9.019 <u>8.816</u>

Source: The table was prepared by the researchers based on the outputs of the electronic calculator.

dinars, with a general average for the month of Safar as a whole. As an extension of the explanation of the behavior of the banking sector's stock prices, the hotel sector's prices did not diverge much from the path of decline and rise at the beginning and end of the month, respectively, passing through the lowest average price represented by the visiting days, which is the second ten days extending from 10-20 zero, as the average share price reached (8.545) dinars per share and on the rise again in the last ten months to reach (9.019) dinars per share, supported by the idea of stagnation in the banking sector also during visiting times.

3. Conclusions

The current study was complementary to previous scientific twinning between the science of finance and psychology by explaining some behaviors, phenomena, and mysteries that the traditional school of finance could not explain. This was confirmed by the noticeable decline in stock prices during the forty days of the visit and then its rise again at the end of the month, according to the research sample, so this decline constitutes an opportunity for investment decision-makers to benefit from the price differences that occurred during the days of the visit, and one of the important things that should be paid attention to

is the low evaluation of the share price. One when the banking sector amounted to less than one dinar only, while the exchange rate of one dollar against the Iraqi dinar in 2022 reached approximately 1,500 US dollars per dinar, which is illogical in pricing the shares of the most important sector listed in the Iraqi financial market, so whoever wants to correct the course of the market And by integrating it into the global markets through the participation of the largest proportion of the shareholding companies operating in Iraq, it must begin correcting the irrational (small value-large size) pricing methodology to build a competitive financial market that is attractive to many investors.

Conflict of Interest

There is no conflict of interest.

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