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Earnings shocks: An event study on Boursa Kuwait

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ABSTRACT

This study investigates the effects of earnings announcements on stock prices in Boursa Kuwait, formerly known as the Kuwait Stock Exchange (KSE). The data spans the period 2018–2020, and both positive and negative earnings announcements are employed as shock events and their effects assessed. The study results show that there is a statistically abnormal rate of return before and after the earnings announcements and that most abnormal returns are just after the earnings announcement. This most likely indicates that Boursa Kuwait is a semi-strong efficient stock market. One important implication is an indication that insider-related trading might be absent in Boursa Kuwait.

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Introduction

Whilst extensive studies of varying methodologies have been conducted in empirical finance in an attempt to draw correlation between stock prices and certain financial events; the results have been varied, inconclusive and at times controversial due to contrasting market systems and analysis methodologies. Earnings announcements will naturally demonstrate stock price reactions, with levels varying based on market efficiency. This study looks to assess standard events and the effects of earnings announcement on listed stock on Boursa Kuwait.

Finance literature of standard events is extensive and exhaustive with wide-ranging coverage of events such as dividend announcements, earnings announcements, takeover bids and share splits; with all constituting “new information” that would reasonably be expected to cause shifts in stock prices.

Abraham et al. (2002) document a mixed support for weak-form efficiency in the Boursa Kuwait, despite warnings that standard tests of market efficiency may be biased towards efficiency given sparse trading volumes on Boursa Kuwait. Abdmoulah (2010) meanwhile, employs an updated econometric technique to test the effects of government reform with in the Gulf Cooperation Council (GCC) countries. He finds, in the case of Kuwait, that there was poor evidence of weak-form efficiency; a possible indication of ineffective reform measures at the time.

Lagoarde-Segot and Lucey (2008) detail a variety of reasons why events do not always illicit an immediate change in stocks that would reasonably be expected to move. These include, but are not limited to; market illiquidity, low market competition (giving rise to dominant players, monopolies etc), a lack of information in the market (a lack of transparency) and structural and institutional factors such as fragmented markets or political uncertainty.

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Ball (1978) found that there were significant abnormal movements in stock prices immediately after quarterly earnings were announced and hypothesized that these were caused not by market inefficiency; but by deficiencies in the capital asset pricing model. Watts (1978), however, found that the presence of transactions costs could account for a significant number of these deviations from predicted prices (assuming market efficiency) and that the abnormal returns could not be explained solely by deficiencies in the asset pricing model. Aharony and Swary (1980), Pyemo (2011), Sponholtz (2005), Wang and Phet (2012), Mlonzi, Kruger and Nthoesane (2011), all investigate the effect of earnings announcements on stock prices in different stock markets. Their findings document significant positive and negative effects of earnings announcements on stock prices.

This study investigates the effects of earnings announcements on stock prices in Boursa Kuwait, formerly known as the Kuwait Stock Exchange (KSE). The data spans the period 2018–2020, and both positive and negative earnings announcements are employed as a shock events and their effects assessed.

Research and Methodology

Data

This paper examines the effect of earnings surprises on share price returns using data from shares listed on Boursa Kuwait. This study uses the standard definition of an earnings surprise, as defined by Bartov et al. (2002), in that an earnings surprise exists if the reported earnings announcement for a certain period differs from the expected earnings. That is;

$$ES_t = \text{Earnings}_t - E(\text{Earnings}_t)$$

where ES_t is the earnings surprise for time t , Earnings_t is the reported earnings figure for time t (for the purposes of this study, net income will be used), and $E(\text{Earnings}_t)$ represents the expected for earnings at time t . Based on this definition, a positive earnings surprise is said to occur if the reported earnings figure exceeds the expected earnings estimate in a period, while a negative earnings surprise occurs when reported earnings are lower than expected earnings.

Earnings surprise data is obtained from Bloomberg and reflects the difference between annual net income figures and the estimated net income figures from all the analysts covered in the Bloomberg database. This data is collected for the financial years 2018 to 2020. Some companies were excluded due to illiquid stock trading. This resulted in a total of 84 earnings surprise events.

Methodology

The study examines whether traded stocks on the Bursa Kuwait adjust to new information that should be quickly reflected in the earnings surprise. To investigate the effects of an earnings surprise on stock prices, the change in the stock price is tracked around the period in which the annual earnings were announced (as in Campbell et al. (1997)) in which an event (the earnings announcement) is defined. An estimation window is developed for which the parameters to be used in calculating the expected returns are estimated using the CAPM framework. The event window is defined as the period that is specifically tested for abnormal returns. The estimation window for the purposes of this study is from -100 days to -4 days before the announcement. During this period, both the daily stock prices and daily index values (a capitalization-weighted index is employed due to its statistical properties) are collected for each day to calculate returns on Kuwait stock market, while closing index values are collected daily. Stock and index returns are calculated on a daily basis and are defined as follows:

$$R_t = (P_t/P_{t-1}) - 1$$

where R_t refers to the return for the stock (or index) on day t , P_t is the price of the same stock (or index) on day t , and P_{t-1} is the price of the stock (or index) on day $t - 1$. Data collected from days -101 to -4 before the announcement will therefore yield the daily returns from days -100 to -4 before the announcement.

The data collected in the estimation window is used to calculate the expected return for the stock. The expected return is calculated using the standard capital asset pricing model (CAPM) described in Sharpe (1964). Thus,

$$E(R_i) = R_f + B(E(R_m) - R_f)$$

where $E(R_i)$ is the expected return for stock i , R_f is the risk-free rate, $E(R_m)$ is the expected return on the market m . This equation can be simplified to the following:

$$E(R_i) = \alpha + B(E(R_m) - R_f) + \varepsilon$$

where α represents the excess return of the stock over that of the market, and ε represents the error in estimation. It is assumed that the estimation error is zero (see Eckbo, 2011).

There are two methods commonly used to calculate abnormal returns. The buy-and-hold abnormal return (BHAR) model (assumes stocks are bought and held over an entire return and then calculates the abnormal returns that are due to the investor by adopting this investment strategy (Loughran and Vijh, 1997). This is given by the following formula (5):

$$BHAR = \prod_{t=1}^T (1 + R_{i,t}) - \prod_{t=1}^T (1 + R_{m,t})$$

where $R_{i,t}$ is the return on stock i for day t and $R_{m,t}$ is the return on market m for day t . The BHAR is thus the difference in accumulated returns between security i and market index m , with the assumption that the investor buys and holds the security at the start of the estimation window until the end of the event window.

Due to some issues raised in the literature with respect to BHAR (new listing bias, positive skewness, and rebalancing bias (Barber and Lyon (1997) and Fama, (1998))), the cumulative abnormal return (CAR) model of Fama (1998) is also employed in this study. The CAR model begins by defining an abnormal return for a security i at period t ($AR_{i,t}$) as the difference between the realised return and the expected return (estimated by the market model) at time t . This can take either a positive abnormal return or a negative abnormal return in which expected return exceeds realised return. So, we define

$$AR_{i,t} = \varepsilon_{i,t} = r_{i,t} - E(r_i | r_{M,t})$$

where $\varepsilon_{i,t}$ is the abnormal return for security i at time t , $r_{i,t}$ is the actual return for security i at time t , and $E(r_i | r_{M,t})$ represents the expected return for security i at time t given that the actual return of the market index M at time t is provided by $r_{M,t}$.

Having defined the abnormal return, the CAR is simply:

$$CAR_i = \sum_{t=1}^T \varepsilon_{i,t}$$

In essence, the CAR is simply the sum of abnormal returns for every company and period included in the sample.

Following the calculation of the CAR or BHAR, Student's t -test is performed to test if the CAR or BHAR figure is distinct from 0 in a statistically significant manner. The t -test statistic is defined as follows:

$$t = \frac{\sum_{t=1}^T AR_t}{T}$$

For the purposes of this study, we reject the null hypothesis of $AR \neq 0$ at the 5% significance level.

Results and Analysis

For the purpose of the study, the pooled sample of companies is split into two distinct samples to represent those companies who have positive earnings surprise and those companies who have negative earnings surprise. Of the 69 company-years investigated in this study, 51 (61%) showed negative earnings surprises while the remaining 33 (39%) showed positive earnings surprises. The results of the performance of stocks for the pre-event and post-event of positive earnings surprises as well as negative earnings surprise of the earnings announcement are shown in the table 1 below.

Table 1: The Effect of Positive Earnings Announcement on Stocks (on and before the announcement)

Day	AAR	P-Val	CAR	P-Val.	BHAR	P-Val
-3	0.0002	0.73	0.0004	0.88	0.0064	0.11
-2	0.0039	0.36	0.0046	0.45	0.0115	0.08
-1	-0.0018	0.42	0.0021	0.75	0.0018	0.54
0	0.0062	0.18				

CARs and BHARs are calculated using a weighted index. * denotes significance at the 5% level, ** denotes significance at the 1% level.

Results in table 1 show that there are no significant abnormal returns during the period before the earnings announcement for the positive sample of the average abnormal return in both CAR and BHAR. This indicates the inexistence of the information leakage in the pre-announcement period. In order to test the instantaneous effect of earnings announcement on stock prices, table 2 shows that it would not be possible for investors to experience superior risk-adjusted returns by investing after the announcement, especially given the normal transaction cost.

Table 2: The Effect of Positive Earnings Announcement on Stocks

Day	AAR	P-Val	CAR	P-Val	BHAR	P-Val
1	0.0102	0.03	0.0102	0.03	0.0096	0.05
2	0.0033	0.32	0.0135	0.03	0.0173	0.01
3	-0.0035	0.45	0.0100	0.19	0.0143	0.08
4	-0.0001	0.98	0.0098	0.29	0.0094	0.30
5	-0.0040	0.50	0.0059	0.58	0.0067	0.49
6	0.0053	0.14	0.0112	0.40	0.0157	0.24
7	-0.0070	0.14	0.0041	0.74	0.0062	0.68
8	0.0010	0.85	0.0051	0.68	0.0057	0.70
9	-0.0037	0.40	0.0014	0.87	-0.0006	0.97
10	0.0020	0.53	0.0034	0.78	-0.0021	0.88

CARs and BHARs are calculated using a weighted index. * denotes significance at the 5% level, ** denotes significance at the 1% level.

That is, the results in table 2 show collectively an immediate response of stock returns to the earning announcement event, given that there is a statistically significant effect that starts at day 1, just after the announcement day. However, the significant effect extends to the second day, which does not conform to the predictions of EMH of Fama (1970) (as well as other similar studies). That is, when the CAR is used as the abnormal returns measure, there is a significant positive earnings surprise in both days 1 and 2 of the post-announcement period of the actual earnings. In the case of BHAR, there were also proportional significant positive abnormal returns in both days 1 and 2. This is a kind of drift in the effect, hence, some informed investors might have the chance to earn abnormal returns.

Table 3: The Effect of Negative Earnings Announcement on Stocks (on and before the announcement)

Day	AAR	Prob.	CAR	Prob.	BHAR	Prob.
-3	0.0003	0.71	0.0004	0.45	0.0046	0.16
-2	-0.0075	0.04	-0.0071	0.12	-0.0001	0.82
-1	0.0020	0.34	-0.0051	0.23	0.0008	0.78
0	0.0021	0.11				

CARs and BHARs are calculated using a weighted index. * denotes significance at the 5% level, ** denotes significance at the 1% level.

Table 3 indicates, similar to the results in Table 1, that there is no evidence of significant abnormal returns before the announcement of the negative earnings surprise for both CAR and BHAR, suggesting little or no information leakage. Testing the information leakage is the primary purpose for separately considering pre- and post-event surprise. Unexpectedly, and given a negative surprise is witnessed, the table shows some positive return at day zero, albeit statistically insignificant. This could be explained by a number of factors. Inaccuracy in capturing the appropriate expected return, or a lack of efficiency may cause this given that within inefficient markets, such information is not absorbed at the event day and there is often a lag before prices regress to the new equilibrium level. This would result in a fluctuating reaction and therefore possible explain the existence of a positive return within our negative sample. Another possible reason is market mispricing due to positive feedback trading, as explained in Hong and Stein, 1999. Additionally, incomplete or imperfect information may often lead to a lag in prices moving in line with logical, expected outcomes.

Table 4 shows the results of the performance of stocks after the announcement day for the negative sample. The table shows no significant abnormal returns immediately following the announcement day, supporting the no-leakage conjecture. In addition, and one that is unlikely to be considered a feature of an informationally efficient semi-strong market, there exists, surprisingly, some negative earnings announcement effect on stock price on days 5, 6, 8, 9, and 10, which is considered a small encouraging result as far as market efficiency is concerned.

Table 4: The Effect of Positive Earnings Announcement on Stocks

Day	AAR	P-Val	CAR	P-Val	BHAR	P-Val
1	-0.0033	0.15	-0.0033	0.12	-0.0004	0.71
2	0.0022	0.29	-0.0011	0.55	0.0035	0.18
3	0.0007	0.75	-0.0004	0.81	0.0049	0.28
4	-0.0069	0.01	-0.0072	0.13	-0.0046	0.35
5	-0.0036	0.16	-0.0109	0.04	-0.0057	0.29
6	-0.0028	0.28	-0.0137	0.03	-0.0052	0.34
7	0.0025	0.23	-0.0111	0.11	-0.0001	0.82
8	-0.0060	0.1	-0.0171	0.04	-0.0066	0.31
9	-0.0038	0.22	-0.0210	0.02	-0.0108	0.19
10	-0.0047	0.19	-0.0256	0.04	-0.0142	0.16

CARs and BHARs are calculated using a weighted index. * denotes significance at the 5% level, ** denotes significance at the 1% level.

That is, given that there is no instantaneous and rapid effect in CARs on day 1, there appears to be no significant leakage of information to the market. Investors appear to interact with the negative news about earnings, and the results are statistically significant. This may be explained in terms of possible delays in information processing. Moreover, this may be supported by behaviour noticed by local commentator, suggesting local investors may not always react immediately to negative trends in the hopes of a reversal or correction. When BHAR was used as the measure of abnormal returns, there were no significant negative abnormal returns at the 5% significance level. The noise trading behaviour followed by many investors might therefore have an effect on the contradictory and surprising results. A contrasting view for the delayed reaction to the negative news suggests that most of the investors in the Boursa Kuwait are individual and marginal investors, not institutional investors, and therefore do not demonstrate rational investment behaviour. Other reasons extend to the nonexistence of a market maker, which causes illiquidity in the stock, resulting in a lack of continuity in the price spectrum. Furthermore, the government owns a significant stake in some of the most prominent listed companies, exerting a negative effect on stock liquidity and performance in downturn markets.

An interesting result is also found in this study with respect to CAR calculations. It seems that there are persistent abnormal returns after the earnings announcement between days [+5, +10] for the negative sample (with exception of day 7).

Conclusions

The study primarily demonstrates an underlying trend of significant abnormal returns following the announcement of earnings of companies listed in the Boursa Kuwait. This serves to provide compelling evidence of a statistically significant influence of such announcements on the value of companies; agreeing with previous findings of which confirm a statistically significant positive impact of earnings announcements on share prices. However, the results of the earnings announcements show that the Boursa Kuwait does not exhibit market efficiency, given the effect of these announcements is often seen to extend to beyond one day. This gives weight to the argument that there exists persistence in the return adjustment after the announcement day for several day, potentially caused by information manipulation culminating in a lag of about one trading day caused by disproportionately high percental of unsophisticated investors.

In the case of negative earnings surprises, negative abnormal returns were often found after the earnings announcement with a notable lag in investors' information processing's - which is a feature associated with inefficient markets.

This study may be of benefit to various parties. For Investors looking to invest within the Boursa Kuwait; the study provides insights into the volume of investment information needed in order to realise a satisfactory rate of return. For companies' management teams, the study helps to understand the implication of the information they release into the markets, as well as helping to understand how such information is reflected in the companies' stock prices. This enables better assessment and determination of methods to increase stock attractiveness to investors. For regulatory authorities, it helps understand the real effects of released information, and helping to develop measures aimed at eliminating vices such as insider trading. For academics, this study provides reference points may serve as a benchmark or reference point for future researchers looking to build on this study.

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